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ABSTRACT

Investigations and findings of the Temporary State Commission on Youth Education in Environmental Conservation for the State of New York are conveyed in this final report. A philcsophical rationale introduces the report followed by a history of the Commission and a summary of its activities under the present staff. Highlights of six regional meetings are briefly characterized and the findings derived from these meetings, on the present status of education in environmental conservation, are enumerated. Described in detail is a plan for regional environmental education development emphasizing tctal community involvement through both formal and informal education. It promotes the utilization of resources indigenous to the region, thereby necessitating only minimum assistance from outside and assuring a high degree of relevancy for the region and its needs. Both regional and state needs are identified together with recommendations for the implementation of environmental education. Condensed accounts of the regional meetings are presented in the appendices. A related document is SE 016 253 which gives the full reports of these meetings. (BL)

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TEMPORARY STATE COMMISSION

ON

YOUTH EDUCATION IN CONSERVATION

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THIRD REPORT TO THE GOVERNOR AND LEGISLATURE ON CONSERVATION EDUCATION

APRIL 1973

SE 016 252

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Senator Bernard C. Smith
Chairman

Dr. John A. Gustafson
Vice-Chairman

Dr. Eric E. Beamish
Dr. Harlan B. Brumsted
Co-Directors

STATE OF NEW YORK
TEMPORARY STATE COMMISSION
ON
YOUTH EDUCATION IN ENVIRONMENTAL CONSERVATION
ROOM 409 — LEGISLATIVE BLDG., SOUTH MALL
ALBANY, NEW YORK 12224
TELEPHONE: (518) 474-7397

COMMISSION MEMBERS
Mrs. Nancy Ayers
Mr. Harold J. Evans
Mr. Victor A. Fitchlee
Dr. John I. Green
Mr. George Miller, Jr.
Mr. Daniel Smiley
Mr. John L. Stookey
Hon. Henry L. Diamond
Commissioner of Environmental Conservation
Hon. Ewald B. Nyquist
Commissioner of Education

To the Hon. Nelson A. Rockefeller, Governor
Hon. Warren M. Anderson, President Pro Tem of the Senate
Hon. Perry B. Duryea, Speaker of the Assembly
Hon. Members of the Legislature of the State of New York

I have the honor to transmit this Final Report of the Temporary State Commission on Youth Education in Environmental Conservation, in accordance with Chapter 667 of the laws of 1972.

The State of New York is to be commended for the great interest it has evidenced in maintaining environmental quality through many innovative and effective legislative programs. It has set an example for other states of our nation by its dedication and commitment to effective environmental management.

Environmental conservation education is an integral part of any good and comprehensive environmental plan. Through its investigations, the Commission has been made aware of the intensive public concern that exists for environmental conservation education in New York State. It has also become aware of some of our deficiencies in this area.

The Commission is grateful for the opportunity to convey its findings to the Governor and the Legislature in this its third and final report.

Respectfully yours,

Bernard C. Smith

BERNARD C. SMITH
Chairman

THE COMMISSION

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John A. Gustafson, Vice Chairman

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John I. Green
George S. Miller, Jr.
Daniel Smiley
John L. Stookey

Henry L. Diamond, Commissioner of Environmental Conservation
Ewald B. Nyquist, Commissioner of Education

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Constance A. Komarek	Commission Associate
Marguerite J. Walters	Conference Coordinator
Carol J. Murphy	Stenographer
Mary V. Ortale	Administrative Assistant

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To all the many persons from across New York State -- students, teachers, conservationists and other professionals and citizens -- who over the past three years have generously shared ideas and knowledge, as well as their time and support, we extend most sincere appreciation. The assistance of these numerous sources has been liberal and unreserved, their contribution often being of paramount importance to the Commission's work. Our panel of Advisory Members, especially, deserve our thanks for their readiness to respond to our frequent requests.

Special tribute is due those who served on planning and production committees and those who acted as spokesmen at the eight regional meetings sponsored by the Commission in 1972 and 1973. Their superlative efforts furnished the insights and evidence which gave rise to the plans and recommendations made in this report. It is a pleasure for us to name the individuals who furnished leadership within these regions, steering both the meetings and the subsequent reports to successful conclusion:

Estelle Avery
Walker Banning
William Berberet
Thomas Boyd
William Lawrence
Richard Madigan
Richard L. Robinson
Bruce E. Schwartz
Paul E. Turner
Mrs. Chloe M. Wacenske
Lois Wilson
Elliot Willensky

The Commission gratefully recognizes the services of its staff over the past three years whose energy and devotion made possible the many studies and activities which culminate in this final report. To our present staff, we credit the noteworthy accomplishment of producing six regional meetings and this report within the brief period, December, 1972 - April, 1973.

A special tribute is given to Mrs. Mary Ortale, who has served the Commission as Administrative Assistant since our inception. She has lent continuity to our efforts through her loyalty and devotion and has been a constant source of helpful, accurate information. To Mary Ortale, the Commission expresses deep and sincere appreciation.

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NO IMPORTATANT CHANGE IN ETHICS WAS EVER ACCOMPLISHED WITHOUT AN INTERNAL CHANGE IN OUR INTELLECTUAL EMPHASIS, LOYALTIES, AFFECTIONS, AND CONVICTIONS.

ALDO LEOPOLD
A SAND COUNTY ALMANAC

PHILOSOPHICAL RATIONALE

Environmental problems have ceased being merely isolated local crises. They have become hard, inescapable reality for all. The sudden widespread public recognition of the nation's acute environmental plight in 1970 created a crisis situation perceived then by the unknowing as solvable through relatively simple, one-time remedies. Public awareness has since matured to the point where a significant proportion of society now accepts the intricate, deep-seated nature of environmental problems and recognizes that resolution is possible only through complex and long-term solutions.

Virtually no recent plan set forth to solve environmental problems omits reference to education as a necessary component of well-designed process. Yet, in the past, implementation of such inclusive plans have commonly made only token efforts to use education for fostering that level of environmental awareness and understanding necessary to produce truly measurable alterations in public perception and behavior. The urgency associated with the most severe environmental problems has often militated against employing education in any but a token manner as a part of the solution. Those who give only a subordinate or peripheral role to education argue that, as a process, it moves far too slowly to achieve any significantly useful effect in the abbreviated time at our disposal. Yet, in a nation which has historically relied upon education to assure the preservation of its democracy through full participation of the enlightened individual citizen, such a stance is unfounded and untenable. Any failure of education in environmental conservation to produce widespread, demonstrable effect is primarily attributable to failure in assuring its universal implementation, not to its lack of real capacity to do the job.

It follows that a most urgent case can be made for education in environmental conservation as the primary force for eliciting a widespread public self-regulation in environmental control. There is no

doubt in any reasonable mind today that maintenance of a balanced and vital environment in the future will require the enforcement of increasingly stringent governmental regulations and controls. These will necessarily have some permanent effect on presently accepted and practiced life styles and will impose limitations that, in the minds of some, seriously imperil traditional concepts of freedom. Insofar as license in respect to human treatment of the environment has been misinterpreted for freedom, such enforcement could be viewed as positive. But, even in this case, unilateral action on the part of regulatory bodies taken against, rather than with, the general citizenry to prescribe the physical limits of behavior inevitably threatens to undermine the rights of individual thought and reason that are the foundation of democracy.

Limitations which preserve the integrity of environment are inevitable. But deriving constraints from the deliberations of society collectively provides the only assurance that the process of restoring the environment will not also promote the subjugation of human rights. The role of education is to create both the awareness and understanding which leads to changes in public attitudes, values and, ultimately, behavior which obviate the need for excessive imposed regulation and, at the same time, generate universal acceptance and support for those minimal legal constraints which will assure a quality life for all.

Education in environmental conservation of this genre will not occur through the formal or even informal experiences provided by traditional educational institutions alone. Neither will it be derived solely through the efforts of environmental organizations, even those of national dimensions and prestige. The mass media have an important catalytic role to play but, unaided, lack the substance and power to move society in what must be a major reformulation of its philosophy and practices.

Education in environmental conservation, like environmental control, is no matter for unilateral concern and action. It affects the entire society and, therefore, involves participation of all its structural

entities as causative agents. Business, industry, labor and government as well as education, environmental organizations and mass media have equal rights and equal responsibilities for formulating, implementing and sustaining environmental education in this universal sense.

The magnitude of the undertaking demands a mobilization and sharing of educational resources having no comparable precedent. Education in environmental conservation must become a continuous, permanent process for and of the entire citizenry, responding constantly to changing environmental conditions and needs. Its plan must be ambitious but feasible, and its support assured and perpetuated by the whole society. Nothing short of <u>total involvement</u> of the human community at all levels of its organization can adequately respond to the need.

Imminency of crisis has traditionally elicited some of the finest human efforts to mobilize its total resources and employ them to avoid catastrophe. Crisis abounds in today's world. But to a great extent its very prevalence has weakened the potential for establishing action priorities and has dissipated the strength reserved for making concerted response. Nevertheless the quality of the world we inhabit and the way we are to live and be governed in the future are inextricably related to the implementation of environmental control in which, without reservation, the role of education is of paramount significance.

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HISTORY

The New York State Legislature, a full year before the furor of Earth Day, recognized the need for making the youth of the state more aware of the value of conservation. In 1969, they passed a bill to establish a temporary commission whose job it would be to investigate the ways in which conservation was currently being taught in the state and to make recommendations on how it could be extended or improved.

Originally called the Temporary State Commission on Youth Education in Conservation, the Commission consisted of environmental education specialists and concerned citizens -- three appointed by the governor, three by the speaker of the assembly and three by the president pro tem of the senate. In addition the commissioners of the State Departments of Education and Environmental Conservation are members of the Temporary Commission. (A brief summary of each non-agency member's qualifications follows this section.) Commission members serve without compensation except for expenses, but they have an operating budget and a staff.

Almost immediately after the Commission's creation, the members realized that a broader interpretation of their mandate was demanded by a growing environmental consciousness on the part of the general public. They gradually expanded the scope of their activities to include in conservation education all facets of the environment. They recognized that environmental conservation was important in both urban and rural settings and that it involved awareness of political, economic and other social influences as well as knowledge of natural resources management.

The aim of education in environmental conservation, they felt, was to alter our value system and our life style through increased awareness, understanding and appreciation of our environment. They saw the need to reach beyond the traditional educational institutions in an attempt to educate all people who are not aware of their responsibilities toward the environment. They justified this expansion of charge by explaining that in these times of near-crisis in the environment, we cannot

afford to wait until a new generation of environmentally aware citizens comes to maturity.

To help identify worthwhile ongoing projects and to determine the need for developing or extending conservation education, the Commission held five public hearings throughout the state between January 15 and February 19, 1970. Participants at these hearings, held in Niagara Falls, Stony Brook, Binghamton, New York City and Albany, included many high school and college students and representatives from education, conservation and citizens groups.

A theme of urgency ran through many of these meetings with some people favoring crash programs in environmental conservation with an emphasis on action programs. Many were concerned about the fragmentation which seemed to exist in conservation education programs. They felt that better coordination of these educational activities and an emphasis on current problems would help to change society's value system.

The ways to achieve an environmentally enlightened citizenry were very much in debate -- Should conservation education be coordinated by the Department of Environmental Conservation? By the State Education Department? By a new agency?

Should environmental education be mandated as a new course in New York State schools? Should the same material be incorporated into existing course structures? Should the state make more resources and facilities available for conservation education? Should teachers be required to have in-service and/or pre-service training in conservation in order to retain their certification?

These and other difficult questions were considered and evaluated, but the field of environmental education was changing too quickly and opinions were too diverse for Commission policy to be made on them in its first few months of operation.

Between March, 1970 and March, 1971, Commission activities focused on obtaining information on

environmental education programs from throughout the state and nation. Various Commission members traveled widely to confer with experts in the field and to attend conferences on environmental education. They solicited information on available programs and services from agencies such as the National Parks Service, the Department of Health, Education and Welfare, the Bureau of Outdoor Recreation, and the Department of Agriculture. They also investigated possible help for environmental education available through Title I of the Higher Education Act of 1965 and Title III of the Elementary and Secondary Education Act.

On the state level they identified the Departments of Environmental Conservation and Education as having primary responsibility for environmental education with the Department of Health and the Office of Parks and Recreation having some involvement as well. They also noted that such organizations as the New York State Conservation Council, the New York State Outdoor Education Association, the New York State Soil and Water Conservation Districts Association and other statewide groups have an interest in this area and some resources at their disposal to help implement conservation education programs.

The Commission members pointed to the State University of New York and other institutions of higher learning as having a significant role to play in conservation education. They named the SUNY College of Environmental Science and Forestry, the SUNY Statutory College of Agriculture and Life Sciences at Cornell University, with its public service arm, New York Cooperative Extension, the Great Lakes Laboratory of the State University College at Buffalo and the Miner Institute for Man and his Environment, which operates in conjunction with Plattsburgh State University College, as institutions with ongoing programs in environmental education.

The Commission found that state and federal programs are supplemented by locally-organized activities such as those of the Susquehanna Environmental Education Association of Broome County, ACTION for Preservation and Conservation of the North Shore of Long Island, the Long

Island Environmental Council, SCOPE, a cooperative effort serving Suffolk County and others.

Commission members also gathered examples of curricula and attempts at master plans for environmental education developed by other states. They kept abreast of new developments at the federal level such as the creation of the Office of Environmental Education in the Department of Health, Education and Welfare in October, 1970. On the state level they noted the development of curricular materials "Environmental Education Instructional Activities, K-6 and 7-12," which were available for distribution in the fall, 1970 by the State Education Department's Task Force on Environmental Education. They also recognized the significant role of the State Museum, which operates through the State Education Department, in providing information on environmental problems and their causes and in offering technical assistance to schools.

When Henry L. Diamond became commissioner of the Department of Environmental Conservation, the Commission noted the Department's creation of the Division of Educational Services, composed of the Bureaus of Publications, Education, Community Assistance and Audio-Visual Services. Among the activities of the Division are the operation of the youth conservation camp program with its emphasis on environmental education; workshops at the Rogers Environmental Education Center in Sherburne, developed in cooperation with the State Education Department, dealing with the earth science curriculum and teacher training; evening lecture series by the Department of Environmental Conservation at public campsites; the publication of The Conservationist magazine, Environment newspaper and public information material on all phases of environmental conservation. Its Bureau of Community Assistance works primarily with implementing the laws of 1970 authorizing municipal environmental conservation management councils. In facilitating the work of these groups, the Bureau offers clearinghouse and coordination services necessary to environmental problem-solving.

In 1971, the Commission, carrying on its work as a Subcommittee of the Senate Committee on Conservation and Recreation, received a grant from the federal Office of Environmental Education to evaluate a master plan for environmental education in New York State. The dissemination of the draft "New York State Environmental Education Plan" was made possible through these funds.

This plan called for the establishment of a Council on Environmental Education Development (CEED) which was intended to coordinate environmental education activities statewide, including those programs now being conducted by various state agencies. It would also collect information on existing programs and concepts in environmental education and disseminate them to concerned organizations and private citizens. CEED would work with the Department of Environmental Conservation, the State Education Department and other appropriate government agencies to conduct its programs.

Under CEED, work on the local level theoretically would be conducted by local conservation councils. Over 140 of these groups now exist in the state and are currently involved in a wide variety of conservation-related activities. Through the local conservation councils and commissions the Subcommittee hoped to enlist the aid and support of business, industry, education, labor and other important groups in the community.

The Subcommittee realized that this report could not be the final master plan for environmental education in New York State. It recommended that the plan be tested for public acceptability and feasibility before any attempt was made to implement it.

While the environmental education plan was being prepared, Subcommittee members formed work groups to study areas of special interest in environmental education. These included groups on curriculum development, continuing education, conservation education for girls, urban education, youth utilization, value

patterns and activities of other states. The work groups drew in people from the Subcommittee's board of advisors and others with an interest in their investigations. These meetings were important sources of base information for the environmental education plan and helped the Subcommittee consider the issues relevant to New York State.

Public reaction to the completed plan was first solicited in March, 1972 at a meeting on the Niagara Frontier. A broad cross section of the population in this area was invited to comment, critize and suggest improvements on the plan in order to make it responsive to the environmental needs they felt were most important. This meeting pointed out considerations which must enter into any environmental education activity at the state level -- a responsiveness to local needs, a recognition of regional differences and a realistic estimate of costs. It also helped concretize specific needs in the Niagara Frontier -- more information on what existing agencies and organizations are doing, better coordination of present programs, opportunities for in- and pre-service teacher training and better facilities for outdoor forms of environmental education.

A similar meeting was held on Long Island in June 1972. This effort brought together leaders in business, conservation and education from throughout Long Island in an attempt to achieve coordination of both formal and informal environmental education programs. Equally important, this meeting provided valuable feed-back on the feasibility of the state plan for environmental education. With this information the Temporary Senate Subcommittee on Youth Education in Conservation was better able to refine its ideas on the most appropriate way to provide comprehensive programs in environmental education for all people and organizations in New York State.

The Subcommittee regained Commission status as a result of a bill passed in May, 1972.

Officially called the Temporary State Commission on Youth Education in Environmental Conservation, it was re-established in the fall, 1972. It hired a staff to finalize the ideas and concepts that had been generated previously, to find out whether the public's concern and needs had altered appreciably from those already expressed, and to make concise and specific recommendations on how to meet these needs to the legislature and the governor.

The current staff of the Commission has spent the past four months testing the potentials for total community involvement in environmental education programs on a regional level and exploring ways in which the available resources can be used more productively. As a result of its past interactions with the public and its research activities, the Commission felt that opportunities to further environmental education in the state were often unrealized on a regional level because people failed to take advantage of the full range of resources available to them. Once the availability of these resources was explored, the regions would be better able to assess the nature and degree of remaining obstacles to implementation. With knowledge of the real obstacles, the Commission felt that it would be in a stronger position to recommend measures which would truly benefit the citizenry at the local level.

With these considerations in mind the Commission embarked on a series of regional forums which were held between January 19 and February 24, 1973, and which involved people from six regions of the state. It also undertook a special study of the role of the State University of New York in environmental education.

ABOUT THE COMMISSION MEMBERS

Commission members represent a wide variety of interests and experiences in the conservation and environmental education fields.

Bernard C. Smith, chairman of the Temporary State Commission on Youth Education in Environmental Conservation, is a state senator, 2nd senatorial district, from Northport, N.Y. A long-time advocate of conservation and an avid sportsman, he is chairman of the Senate's Committee on Conservation, Recreation and the Environment. He is also on the Committees on Health; Housing and Urban Development; Finance; Banks; Codes.

Mrs. Nancy Ayers of Endwell, N.Y. has long been active in state and national environmental education activities. She is executive director of the Susquehanna Environmental Education Association, a director representing New York State on the Susquehanna River Basin Association and a member of the Advisory Council on Environmental Education in the U.S. Office of Education. She is also a member of the New York State Outdoor Education Association, the Conservation Education Association and the National Association for Environmental Education.

Victor A. Fitchlee of Middleport, N.Y. is a retired engineer with a lifetime commitment to conservation. He was instrumental in establishing Camp Arnot Conservation Training Center at Cornell University. He has been secretary-treasurer of the Niagara County Federation of Conservation Clubs for thirty years and has been county chairman of the Soil and Water Conservation District for 12 years. He is also vice-chairman of the State Soil and Water Conservation Districts Association. He is currently chairman of the County Youth Conservation Education Advisory Committee, and councilman to the New York State Conservation Council.

Harold J. Evans, Jr. is an earth science teacher and part-time farmer from Riverhead, N.Y. He is a

member of the National Science Teachers Association, the Science Teachers Association of New York State, the National Education Association, Audubon Society, Nature Conservancy, Farm Bureau and Grange, and he is chairman of the Suffolk County 4-H Division Program Committee and Suffolk County 4-H Outdoor Education Committee. He also serves as chairman of the Riverhead Town Conservation Advisory Committee and Conservation Liaison for the Riverhead Central School District.

John I. Green of Canton, N.Y. is an associate professor at St. Lawrence University. He is a graduate of the SUNY College of Environmental Science and Forestry, received his masters in science education from Syracuse University and his Ph.D in Science and Conservation Education from Cornell University. He has wide experience teaching conservation and biology at Cornell, at Brockport, at the Woods Hole Childrens School of Science and the New Jersey School of Conservation.

John A. Gustafson is chairman of the Department of Biological Sciences at the State University College at Cortland. He is a fellow and member of the council of the American Association for the Advancement of Science, treasurer and associate editor of the American Nature Study Society, vice chairman of the Eastern Susquehanna Water Resources Board and member of the American Institute of Biological Sciences, the Botanical Society of America and the Northeastern Bird Banding Association. He has been a program leader for the New York State Outdoor Education Association and has participated in numerous other conservation education programs.

George S. Miller, Jr., a graduate of Cornell University, is with the Division of Environmental Health Services of the Suffolk County Department of Health. He is former chairman of the Conservation Advisory Council of East Hampton, president of the Springs School Board, a former member of the Fire Island National Seashore Advisory Committee, chairman of the East Hampton Town Planning Board and advisory committee member of the Food Technology Department

of the SUNY Agriculture and Technical College in Farmingdale, N.Y.

Daniel Smiley is owner and operator of the Mohonk Mountain House in New Paltz. He has been on the board of governors of the Nature Conservancy and is now on their national council. He is also treasurer of the Eastern New York Chapter of that organization. He is a member of the research and records committee of the John Burroughs Natural Historical Society; steering committee member of the Catskill Center for Conservation and Development; Adirondack and Appalacian Mountain Club member. He was also active in the development of the Mid-Hudson-Catskills Museum as vice chairman for science and is Administrator of the Mohonk Trust.

John L. Stookey is vice president and general manager of the Erie and Niagara Insurance Company. He was an extension agent for many years and served as their New York State chairman for the 4-H Conservation Committee. He also served as chairman of the New York State Youth Conservation Education Committee. He has conducted youth conservation activities and projects for 30 years. He has been active in establishing Camp Arnot Conservation Training Center at Cornell University. He has also worked closely with the New York State Sportsmen's Clubs and is a past president of the Niagara County Federation of Sportsmen's Clubs.

SUMMARY OF COMMISSION ACTIVITIES UNDER PRESENT STAFF

At its November 10, 1972 meeting, the Commission charged the newly appointed staff with organizing and conducting six regional meetings that would demonstrate the concept of "total community involvement" in environmental education. From its work in previous years it had come to recognize that the variety of physical environments and social institutions in New York State lead to varying degrees of need and discourage the statewide application of highly specific programs.

Where population density is high, the means to community with various sectors of the community are often well developed. Television, radio, newspapers, magazines and other kinds of mass media tend to congregate in such areas. While their messages may be transmitted to less populous areas of the state and nation, their primary sphere of influence is in the region where they originate. Less formal means of communication are also most developed in urban areas. Telephone systems can reach a greater proportion of the population through toll-free dialing. Lists of interested persons and available resources are more readily located. The structure of the social system puts residents in contact with great numbers of people, offering the potential, if not the reality, of more communication.

Highway systems and mass transit are usually most developed in urban areas, and the actual distances which must be covered in order to bring people together are much less than in areas where population density is low. These factors also increase the potential effectiveness of communications in urban areas and can bring together people necessary to translate ideas into action.

In population centers, also, there tends to be a greater heterogeneity of background and experience. The potential exists for locating a variety of resource people, each of whom can make a contribution to the project as a whole.

At its highest level, however, the complexity of the social situation in an urban center can confound all

attempts to initiate and sustain programs. Ethnic group allegiances, reinforced by traditional ways of responding to those of other ethnic backgounds, can create obstacles to effective interaction. Lines of communication, while offering great potential, are often not accessible. Public transportation systems may be available, but to those not affluent enough to own automobiles, they may pose such real or imagined threats to physical well-being that they go unused. Although the resources of business and industry are theoretically most available to people in these areas, they may be under so much pressure from various interest groups that they become inaccessible. The necessity of operating in an extremely complex social organization also means that the impact a single individual can make in a given situation is severely limited. Often, participants must be content to see their efforts incorporated into the bureaucracy and find rewards accruing at low, and often abstract, levels.

These characteristics, well-documented in the literature of sociology, point out the need for tailoring any attempt at environmental education statewide to recognize and respond to the expressed needs and limitations of the people involved. They also help explain why regions with similar kinds of environmental problems may have different levels of environmental awareness.

In urban areas, where decreased quality in the environment due to industrial and other pollution has been perceived directly by the people living in the area, action programs in environmental education are already underway. Often the principal need in these areas is for ways of continuing the level of activity and sustaining programs.

Where the effects of decreased environmental quality are not as obvious, educational efforts must often be directed toward beginning the planning or design phase or toward creating the level of awareness that is necessary before any action can take place.

It was with these considerations in mind that the Commission co-directors, Dr. Eric E. Beamish, formerly of the Central Administration of the State University of New York, and Dr. Harlan B. Brumsted of the Department of Natural Resources, New York State College of Agriculture and Life Sciences, Cornell University, began their work in December, 1972.

Dr. Brumsted followed the approach demonstrated successfully by the Commission during its June, 1972 public meeting on Long Island. For the Long Island meeting, a focal group of active and recognized leaders in environmental education was organized to plan a program which would eventually involve representatives from education, conservation, citizens groups, local government, business and labor in a public forum. This meeting is now seen as the genesis of the Commission's emphasis on "total community involvement" in environmental education.

Throughout his efforts, Dr. Brumsted held to the philosophy that the entire process should be internalized within the regions, that is, while the Commission could act temporarily as a sponsor and supporter, plans and programs had to be products of regional efforts if they were to serve as viable bases for further action.

To facilitate meaningful program development, Dr. Brumsted involved participants from within three planning and development regions, as defined by the State Office of Planning Services, where the Commission had not previously held hearings. These regions offered established communications and inter-governmental ties, as well as distinct economic integrities. The Central New York Region covered Syracuse and the counties of Cayuga, Cortland, Madison, Onondaga and Oswego; the Genesee/Finger Lakes Region included Rochester and the counties of Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne and Yates; the Southern Tier Central Region included Elmira, Corning and the counties of Chemung, Schuyler and Steuben.

These meetings were organized by bringing together a small group of recognized environmental education

leaders to plan, publicize and produce the event within their respective regions. Dr. Brumsted met continuously with all three steering committees to guide their efforts and assist in making detailed arrangements. At each site, meeting plans recommended by the steering committees were referred to a review panel of 25 to 35 people representing diversified interests from throughout the region for a final round of comment and suggestions.

While each of the western meetings was tailored to interests and opportunities within the region, they shared some common elements. For example, all were about seven hours in duration; involved spokesmen from the six sectors of the community being emphasized (business, labor, education, conservation, citizen groups, local government); provided opportunity for small group discussion; included a luncheon or dinner, providing an opportunity for informal mixing and conversation. A total of 550 people, representing the target sectors in all 16 counties of the three regional communities participated in these meetings.

Reports from the western meetings, as published by the Commission in a supplementary volume, were produced under the leadership of institutions or agencies prominent in organizing the meetings themselves. Dr. Brumsted guided the report writing processes, steering them toward development of embryonic regional plans for environmental education. Individuals and small committees drafted segments of the reports, then submitted them to the larger review panels for study and revision.

Meetings in the eastern half of the state, coordinated by Commission co-director Eric E. Beamish and staff members Jonathan Bart and Connie Komarek, were designed to accommodate regional differences by varying meeting formats and by exploring environmental education at a level of sophistication appropriate to each region.

In the Northern New York area, consisting of Essex, Franklin, Warren, Clinton and Hamilton counties, an extensive series of meetings, culminating in two public forums, was held. The Commission's approach took

account of the greater difficulty of travel and communications in this sparsely populated region and also recognized that environmental problems in the area had not yet begun to impinge severely on the residents' quality of life. Through intensive large and small group discussions, the Commission hoped to identify interested individuals in the region, put them in contact with each other, provide them with a preliminary list of available resources and encourage them to work together to meet their common environmental education needs.

In Albany, the state headquarters of the New York State United Teachers Union, a two-day conference coordinated by Marguerite J. Walters, focused on the role of the school in total community involvement programs. While representatives of business, local government, conservation and citizen groups were actively involved in the conference, the format stressed ways in which these groups could work more effectively with teachers, students and school administrators. Environmental education specialists from throughout the state were on hand to offer expert advice on how plans made at the conference might be translated into action.

The New York City forum, which again brought together representatives of the six major community sectors, had to deal with both the more complex environmental problems and the greater potential resources available in a highly urbanized area. Preliminary investigations by Kristin P. Bergfeld indicated that in many instances good environmental education programs were already in existence and that a principal need was for ways of continuing and expanding these programs. For this reason, the New York City forum focused on the ways financial support for environmental education programs might be obtained.

Summaries of the proceedings at the six Commission-sponsored regional meetings follow.

ADIRONDACK SEMINARS
FOR
REGIONAL RESOURCE DEVELOPMENT

January 15, 25, February 15, 26, 27, Chazy, New York
and Lake George, New York

The forested, sparsely populated counties in New York's Adirondack region pose a unique challenge for environmental education. Environmental problems have not yet become acute in the region, and traditional emphasis has been on conservation rather than environmental education. The major industry, tourism, has both increased the economic stability of the region and placed stresses on its environment.

Through an extensive series of meetings, culminating in two public forums, the Commission attempted to establish better communication, identify regional resources and initiate the first stages of planning for environmental education on a regional level. Participants were encouraged to continue design and implementation of programs on their own.

In conjunction with the meeting series, a preliminary inventory of resources for environmental education was prepared under Commission auspices by Plattsburgh journalist Irene Guibord. Not only did this inventory provide an efficient way of assessing existing resources within the region; it also gave local residents a useful tool to use in planning environmental education programs and projects.

As a result of Commission meetings, several regional projects were designed. Some of these are now in the early stages of implementation. The Piseco Elementary School in Hamilton County is organizing a student exchange program with Eagle Hill Junior High School in the Syracuse suburb of Manlius. The program is designed to allow students from both areas to experience an environment very different from their own. A group of citizens in the Plattsburgh area, spearheaded by Dr. Charles Mitchell of the Audubon Society, is investigating ways of using the Department of Environmental Conservation Game Management area at Lake Alice as an environmental education center.

Other proposed projects, which are still in the design phase, include using educational TV to increase environmental awareness and incorporating environmental education into the curriculum of the middle schools in the Tri-Lakes area of Franklin and Essex Counties.

The meetings helped identify several ways in which regional environmental education could be improved. Participants felt that the process of identifying available programs and other resources, initiated through the meetings and the inventory, must be continued through a central facility such as a clearinghouse, a regional environmental education center, or a referral service where up-to-date information would be accessible to all. Although schools are beginning to introduce ecology and conservation into their curricula, teachers voiced a need for additional skills, facilities and materials. Some of the worthwhile projects identified by participants would require outside funding for implementation. Residents felt that any money from New York State for this purpose should be allocated on a regional basis. A fourth need, less often expressed and perhaps only partially recognized, was for the shifting of emphasis from conservation education to the more inclusive education in environmental conservation.

ALBANY CONFERENCE ON EDUCATION
FOR
ENVIRONMENTAL ACTION

February 15 and 16, 1973, SUNY Albany

The Albany conference, "Education for Environmental Action," was sponsored by the Commission, in cooperation with the New York State United Teachers, in order to help schools and other important community sectors work together on environmental education programs.

The conference brought together teachers, students, administrators and board of education members from six carefully selected school districts in a four-county area for two days of intensive discussion with representatives of business and industry, labor, professional conservation organizations, citizens groups and local government. Opportunity was provided for interaction among members of the same county and for idea exchange with representatives from other counties.

County groups were asked to review the current status of environmental education in their areas -- what has been done; what is being done; what needs to be done. They were asked to begin formulating plans for expanding these activities or initiating new ones. They were to identify the facilities and other resources available for use in these activities and to consider the political, economic, social and legal constraints involved in program implementation. Finally they were asked to evaluate their thinking and to identify the logical steps to take in order to achieve the desired outcomes. At the conclusion of each stage of program development, a representative of each county gave a progress report to the entire group. Additional comments and ideas were solicited from this larger audience.

Environmental education activities in the four-county area varied widely in their degree of sophistication and level of development. Some groups were already operating highly refined interdisciplinary programs. Others had attacked one or two specific environmental

problems. Still others had not yet moved beyond the initial stages of planning. At all development levels, many groups discovered at the conference that the full potential for environmental education in their area could be realized best through total community involvement.

1. Through better coordination of regional resources participants felt that they might be able to make all teachers aware of the importance of environmental education and achieve more flexible scheduling, allowing for field trips and individual projects.

2. Students, in particular, saw a need for better communication among schools and proposed to organize a communications network using contacts generated at the conference.

3. More difficult to resolve were problems of transportation, liability, and the lack of suitable environmental education facilities close to schools.

State help was seen as the most appropriate way to meet several regional needs. Among them were the need for liberalization of the state-aid ratio for schools; revision of the school transportation aid formula; a small grants program; a clearinghouse for environmental education information; better in-service training for teachers in environmental education; fellowship grants for teachers to pursue environmental studies; a greater show of concern, support and assistance from the State Education Department in the development of curricula for environmental education; more extensive use of all communications media to develop public awareness of the need for environmental education.

CENTRAL NEW YORK REGIONAL SEMINAR
ON EDUCATION FOR ENVIRONMENTAL ACTION

January 19, 1973, Holiday Inn-Downtown, Syracuse, New York

In terms of organization for multi-county planning and development in upstate New York, the Central Region is advanced. Since creation of a Central New York Regional Planning and Development Board in 1966, the nearly three-quarters of a million residents of these five counties -- Cayuga, Cortland, Madison, Onondaga, Oswego -- increasingly have come to think, plan and act in regional terms. Geography favors regionalism strongly, for the central city, Syracuse, and its County of Onondaga, form a hub surrounded by the four counties.

All sectors of the Central New York regional community appear well organized. In conservation affairs, for example, four of these counties have environmental management councils. Twelve local conservation advisory commissions also exist in the region. Well-organized citizen groups, responsive local governments, and noteworthy private and public colleges and universities provide a favorable medium for the growth of environmental education. Still, local leaders continually stress a problem that the Commission has found to prevail universally: local resources are abundant but neither regional goals nor coordinating forces are present.

The Seminar proved a significant step toward identifying regional needs. Meetings held immediately after the event translated these needs into goals and produced a plan for achieving them. All of this recent activity has served to clarify an overriding characteristic that leaders say must mark these programs; as explicit in the title of their Seminar, this must be "Education for Environmental Action!" The region's environmental problems are typical of the concerns that face any community experiencing rapid urbanization, growth and development: air and water pollution; loss of open space and prime agricultural land; destruction of wetlands and threats to natural areas of many kinds. Thus, regional leaders call for programs that will deliver the knowledge vital to understanding these complex problems

and enable citizens to take effective action in solving them. In addition, they stress the need for preparing future generations to avert the environmental impacts now so rampant.

The chances for mounting successful region-wide education appear excellent. The patterns are present; they have only to be more widely applied. Some of these patterns deserve wide attention. The Board of Education at Union Springs, a rural community in Cayuga County, has what appears to be the first policy statement on environmental education in New York State. Its challenging, far-sighted text, which appears in the supplementary volume of the report, has been acclaimed by State Education Commissioner Ewald B. Nyquist and William Ruckelshaus, Director of the Environmental Protection Agency. Noteworthy, too, are the many co-operative relationships between citizen interest groups and local governments, linkages such as brought the Beaver Lake Nature Center in Onondaga County into being.

THE GENESEE/FINGER LAKES
REGIONAL FORUM ON THE STATUS OF ENVIRONMENTAL EDUCATION

January 25, 1973, Monroe Community College
Rochester, New York

In extensive discussion of regional needs in enviromental education that occurred at the Genesee-Finger Lakes Forum, one was enunciated repeatedly: to foster an attitude of stewardship toward natural resources among the more than one million residents. Multi-discipline, lifelong environmental education, and the personal commitment it could achieve, were identified as the keys to reaching this ambitious goal. The Forum participants recognized that ultimate success would be determined by how well they succeeded, in the immediate future, in forging a coalition of regional leaders to plan a comprehensive education program.

The Genesee-Finger Lakes Planning and Development Region embraces the eight counties of Genesee, Ontario, Livingston, Monroe, Orleans, Seneca, Wayne and Yates. The rich natural resource base includes large areas of the state's most productive agricultural soils; the appealing vacationlands of the Finger Lakes Region; water and wetland resources of inestimable interest and value. Rochester, the central city, and most other cities and towns, are prosperous. Population growth is rapid and regionally is projected to increase more than 50 percent in the next twenty years. Pressures on the resource base are intensifying, making environmental management a leading regional problem.

Citizens of this region have a long history of concern for environmental conservation, amply demonstrated by their own activities and by the exemplary responses of agencies and institutions serving them. The Forum disclosed a large increase in the number of citizen's groups active in environmental affairs during the last few years. Of 52 groups represented at the Forum, 27 had formed since April, 1970. The record reveals that citizen's groups have been a significant force in spurring and supporting environmental education in schools, K-12, in this region. Supplying speakers and

materials, assisting with teachers' workshops and involving students in their activities, are among the types of cooperation they have provided.

Educational efforts of youth groups such as Scouts, Campfire Girls, and 4-H were praised for the motivation and help they provide to environmental education experiences in the school.

This burgeoning and effective activity has not escaped the notice of political leaders and local government officials. These sectors have been cooperative and appear attuned to growing public insistence that ecological impact become a prime consideration in decisions affecting environmental quality. Business leaders have pledged cooperation, too. In all, prospects for total community involvement in developing a regional plan for environmental education are most encouraging.

NEW YORK CITY FORUM
ON
FUNDING FOR ENVIRONMENTAL EDUCATION

February 23, 1973, Graduate Center,
City University of New York

The purpose of the New York City Forum was to estimate the magnitude of support likely to be available for environmental education in the future. The Commission also wanted to learn more about the characteristics of programs receiving support and about the methods of program evaluation being used by funding agencies.

After a series of interviews on these topics with private, state, and federal agencies, the organizations likely to provide the greatest support for environmental education were invited to send representatives to the public forum. The audience consisted of conservation leaders from throughout the New York City area. After filling out a short questionnaire and listening to presentations by the panelists, the audience was given the opportunity to question the panel and to make statements directly to the Commission, represented by Senator Bernard C. Smith and Mrs. Nancy Ayers.

As at other regional meetings, strong support was encountered in New York City for state leadership in environmental education, for greater coordination and cooperation among those involved in environmental education programs, and for improved information dissemination from state agencies. Other conclusions, more specific to the New York City Forum goals, were:

1. There is almost no support for environmental education available from the federal government. The Environmental Education Act has expired. While some attempt is being made to extend its life and continue its funding capability, its future is tenuous at best. The National Science Foundation occasionally funds teacher-training programs and other projects with an environmental education emphasis, but environmental education does not seem to be a primary area of interest.

Other government agencies have few resources to commit to environmental education. No shift in priorities seems likely in the near future at the federal level.

2. At the state level, the Council on the Arts provides a small amount of money for environmental education programs. No other state agencies have significant funding potential.

3. Private foundations have not filled the vacuum left by the federal exodus. The Ford Foundation, for example, has entirely ceased its environmental education funding and does not plan to re-instate it. The limited funding available from private sources usually goes either to educational institutions or to pilot projects as "seed money." Funds for one-time-only educational experiences are virtually non-existent.

4. Funding agency spokesmen emphasized the need for greater role definition among themselves to eliminate duplication and to avoid omissions; their own lack of suitable evaluation techniques; and the need for a common definition of environmental education to prevent its becoming a catch-all category for all unconventional grant applications.

SOUTHERN TIER REGIONAL FORUM
ON
ENVIRONMENTAL EDUCATION

February 1, 1973
Elmira College, Elmira, New York

To the 218,000 inhabitants of Chemung, Schuyler, and Steuben Counties, education in environmental conservation has deep personal relevance. This region and its central cities, Elmira and Corning, received the devastating impact from Hurricane Agnes in late June, 1972. With scars and suffering still apparent and major tasks of rebuilding and readjustment before them, these residents are as aware of human-environmental dependencies as a population could be. They now seek knowledge of why the event occurred and how future catastrophies of this magnitude can be averted.

What characteristics must a regional environmental education program have in order to insure the survival and well-being of an entire region? Essentially, this was the overriding question addressed by more than 200 residents when they met February 1, 1973, at Elmira College to convene their Forum on Environmental Education.

The answers came through as clearly as the question, it must be education for everyone, for all ages. All sectors of the community must cooperate to support and assist in making the region's educational institutions more effective, and each sector must perfect its own informal contributions to environmental education. Furthermore, this education must be realistic, relevant, and based upon regional problems. This quality was emphasized by the spokeswoman for Youth, who called for instruction geared toward solving local problems using the resources of the total community.

Can it happen? Current activity stimulated by the Forum shows these relationships to be taking form. The representatives of local industry, teachers and youth

leaders active in planning the event have remained together to devise ways of producing the locally based units of instruction urgently called for.

In other realms of activity, colleges in the Southern Tier Region appear to be in the forefront, working toward expansion of their existing studies in environmental education. They have offered technical assistance to government agencies, the community, the schools and other organizations, and have taken steps to develop an increasing number of courses open to undergraduates, high school students, teachers and the general public.

Local government representatives and conservationists appear ready to accept responsibility for increased interaction with the public, including greater use of the media. Many had already made studies of problems such as sewage disposal, high heat incineration and water control which they could make available to others. Citizens groups also had been active in environmental education, frequently cooperating with government agencies, private conservation organizations and social service groups. With the impetus provided by the Commission's meeting, participants hoped that these efforts would expand and new avenues of cooperation and coordination would be developed.

FINDINGS, 1972-73

The experience of the eight public meetings sponsored by the Commission in 1972 and 1973, forms the principal basis for these findings on the present status of education in environmental conservation in New York State. These findings also reflect any marked changes in status or attending conditions which are perceived to have occurred since the time of the Commission's first public hearings in Winter, 1970.

1. Public interest in this special area of education rapidly continues to mount and to extend across all sectors of society.

   Response to the Commission's meetings in January and February, 1973, far exceeded expectations, attesting to the present level and extent of public concern.

2. The Commission's definition of environmental education which addresses the need to bring about changes in personal values and life style, seems well accepted.

   Statements were made in support of this goal; there was no evidence of any sector wanting to back away from it.

3. A new sense of urgency pervaded these meetings.

   In taking their work to new areas of the state, the Commission heard many of the same appeals and needs previously expressed at other locations. However, members discerned an emphatic note of urgency generally not characteristic of the earlier hearings. Clearly, a wide cross-section of community leaders now call for action in environmental program development and implementation.

4. Many new examples of excellent local programs and activities were identified.

   Each public meeting served to lengthen the list of outstanding environmental education efforts that have come to the Commission's attention, furnishing numerous instances of promising, innovative programs. New activity brought about through the sponsorship or help of citizen-interest groups seems to be flourishing in many communities. Unquestionably, too, the recent formation of environmental management councils and conservation advisory commissions is an important spark to new efforts in the communities they serve.

5. Commission interest in stimulating development of regional environmental education programs through a process of total community involvement, was well received in trial regions and produced incipient plans worthy of wide attention.

   The approach, which involved the sectors of business, labor and local government, as well as the traditional participation of education, conservation and citizen groups, was found to be attainable and meaningful. Learning of regional interests and needs in environmental education, some business and local government leaders made immediate commitments of cooperation, personnel, facilities and money toward continuing support of this cause.

6. Environmental education, locally and statewide, still must be characterized as highly fragmented, uncoordinated and lacking in overall purpose and direction.

   Despite the excellence and abundance of isolated efforts, this education remains seriously impeded by the virtual absence of direction, communication and coordination, at all levels.

7. Problems besetting the establishment of environmental education in public schools, grades K-12, appear to have become more serious.

   Increasing numbers of teachers who are motivated and capable of including environmental education subject matter in their instruction, and frequently have been doing so successfully, voice growing frustration with the obstacles they confront. They cite continuing difficulties in finding support, materials, in-service training, released time and funds to respond meaningfully to the interests of their students. It is evident that these problems often are manifestations of critical circumstances which many schools face today.

8. The importance of a research component is being stressed.

   The Commission's emphasis upon regional program development has brought realization that these efforts must be paralleled by generation of new knowledge concerning local environmental problems. The research, or factfinding, component is held essential to the kind of education regional leaders are calling for. The demand is for action-oriented education, directed toward helping a community make wise choices in the public decisions affecting environmental management.

9. The need for all elements of the media to become an integral part of local and regional environmental education programs is widely recognized.

   It is not more reporting that is called for, but rather the development of the medias' role in stimulating community dialogues on environmental management issues. Cable television is mentioned often as a valuable but largely untapped resource for meeting this need.

10. The Commission's draft plan (1972) for coordinating environmental education at local, regional and state levels, received highly favorable reaction.

Frequently, expressions of support were accompanied by strong pleas that organizational means for coordination be simple, direct, responsive and inexpensive. Recognizing that many localities and regions do not have the centers and organizations proposed as focal points for coordination, consideration of flexible arrangements was urged.

11. Several forms of state government assistance were universally called for as essential to the development of effective regional programs.

Of highest priority among these suggestions were: establishment of a state agency to provide overall coordination and direction in these affairs; concerted leadership by pertiment state agencies; provision for regional coordination; development of regional environmental education centers; development of a state information clearinghouse; providing small grants to aid local program efforts. In addition, as they can be provided, these resources were requested: funds to cost-share with localities, construction of local environmental education centers; provision of small teams of environmental education specialists to help teachers meet in-service training needs and apply new curricula.

PLAN FOR REGIONAL ENVIRONMENTAL EDUCATION DEVELOPMENT

During the Commission's regional meetings it became evident that most communities maintain, and are striving to improve, environmental education in their region. This is true, not only within the schools, but in other sectors of the community as well where either separately devised and maintained programs or support for school endeavors are intensifying. Business, industry, agriculture, conservation, government, labor, citizen groups, and the media see themselves, and are viewed by others, as having distinct contributions to make if a complete and successful environmental education program is to be implemented.

But often the efforts of educational systems, formal or informal, to work effectively apart or in consort are severely compromised by lack of organization sufficient and appropriate to the task. The plan set forth here advocates a relatively simple organization to effectively and efficiently meld the wills and skills of these interests to create that wholeness of the learning experience on which meaningful environmental education is predicated.

I. THE DETAILED PLAN

A. FORMAL EDUCATION

Formal, or institutionalized, education is essential to any process which prepares citizens to play an active role in solving the environmental problems of their society.

1. Pre-school experience, whether in the home or through institutions, is of fundamental significance to early attitude and value formation in any field. The environment is no exception.

2. Schools, grades K-12, continue building on early learning, developing the attitudes, values, awareness and understanding essential for an effective role as informed, participating citizens in matters of wise environmental resource management. Integration

in all subjects of appropriate knowledge relating to the environment at all grade levels, through inter- and multidisciplinary approaches, is the most widely advocated method for assuring the approach environmental education demands.

Furthermore, there is wide support for education which has true relevance and meaning in the everyday life of the student, a result which can only be attained through the judicious blending of classroom and supplemental learning. For children, outdoor education is vital to developing sensitivities and perceptions of the natural systems that support us. Later, field experiences within the environments of natural and human communities are essential to understanding the complex ramifications of environmental management problems.

Successful development of comprehensive and integrated learning experiences through to the secondary level, which embody classroom, outdoor and community, are dependent on the following factors:

a. Wide public support.
b. Parental support.
c. Board of education support.
d. Support of school administrators, and their ability and commitment to respond.
e. Concern of teachers and their ability and willingness to participate.
f. Availability of outdoor education facilities.
g. Locally related units of instruction, complete with written materials and instructional aids.
h. Stronger linkages between school instruction and pertinent out-of-school educational activities of youth organizations (e.g. 4-H, Scouts, etc.), as well as adult organizations having youth programs (e.g. service clubs).

i. Regional leadership and coordination.
j. State-level support and assistance, including access to curricular and instructional models and materials.
k. Adequate local funding.

3. Higher education in a way similar to K-12, but appropriate to the maturity of its population and the specialization of its offerings, strives for relevance in learning by providing experiences which permit first-hand study and evaluation of local environmental conditions and situations. The essence of such studies, if shared beyond the precincts of the college or university, can be of value to the community at large in helping to assess and solve its environmental problems.

Institutions specializing in teacher preparation and in training various professional specializations in environmental management provide further opportunities for sustaining the two-way relationship: opportunity to apply the results of these studies in regional environmental monitoring and control.

The research function of higher education has great significance also in its potential to supply new knowledge applicable to regional environmental problems, its ability to evaluate the effectiveness of environmental education at all levels, and its capacity to devise and update methods appropriate to the changing needs and conditions within the community and society at large.

4. Adult education embraces a wide spectrum, from formal courses for which academic credit is given, through non-credit programs, to a myriad of less formal learning experiences available through a wide range of community agencies and organizations.

The need in this realm is to assure that goals relating to community environmental conditions are defined and implemented for each such experience and that cooperative efforts among the sponsors are realized to effect comprehensiveness and relatedness in the total program offered.

REGIONAL LEADERSHIP DEFINES ENVIRONMENTAL EDUCATION AS URGENT BUSINESS.

B. PREDICTIONS FOR SUCCESS OF FORMAL EDUCATION

Recognizing the intricate organization of each region's formal education, the mounting fiscal problems at all levels, and numerous other real and potential obstacles to achieving a fully developed program, the future still appears bright. Where the people of the region want these developments to occur, they can; the resource and control are largely in local hands. With continuation and support of the beginnings even now in evidence, there seems to be good reason to believe that fairly substantial embryonic regional programs will develop in the mid-70's. Such confidence is based on the following evidence:

a. Regional leadership defines environmental education as urgent business: the will is evident; the ways can be developed and implemented.

b. The managerial elements of successful regional programs are present and becoming increasingly concerned and active.

c. Outstanding examples of active environmental education programs, designed and sustained by local educators to meet the specific needs of their community, are increasingly in evidence. Although scattered and often partial, these programs are models of environmental education evolved almost solely on the basis of local impetus and concern.

d. Activities such as those sponsored by the Commission this year, which encourage and assist regional planning and development, have counterparts under other sponsorship. Evidence points to the fact that such activities encourage and enhance these coordinating efforts.

Despite this optimism, however, formal environmental education faces very real problems if

substantial, sustained support does not soon become a reality. Such support must be realized internally at all levels of its institutional structure, externally from the many informal educational sources within the community and from the state level.

C. INFORMAL EDUCATION

In its 1972 draft plan for environmental education in New York State, the Commission identified specific ways in which other groups - business and industry, government, citizen groups, conservation organizations, labor, and the media - could perform essential educational functions. The Commission recognized, at that time, the need to involve this informal educational system in regional development. As a result of its 1972-73 meetings, the Commission unanimously concludes that the sustained, integral participation of informal education is fundamentally essential if truly representative and effective regional environmental education programs are to be realized. Although the sectors of the informal system differ from one another in commitment and resources, there are common activities which each can pursue, individually and collectively, to assure optimum growth of a total community involvement program:

1. Self-improvement of their own unique and distinctive roles in environmental education, whether conducted independently or with other participating sectors. Improvement of each sector's role through internal re-organization can be realized by taking the following steps:

   a. Developing a simple mechanism for determing goals and creating processes within organizations that support regional environmental education needs.
   b. Strengthening internal communications as they pertain to environmental education.
   c. Implementing a true spirit of cooperative sharing by identifying

these resources - data, personnel, facilities, land, funds, and equipment - that might become available for use in regional programs.

d. Improving public relations by dealing with the public openly and personally, not seeking to avoid direct involvement by hiding behind advertising or promotional statements.

e. Meeting regularly with leaders of other sectors to determine how joint efforts, using all resources available, can best respond to regional needs.

2. Development of working relationships with other sources of informal education through identification of innovative external processes which link resources to accomplish regional environmental education objectives.

The collective efforts of the informal system can best be applied to a community-wide educational program. Only the diversity of resources and expertise of a broad, collective effort can realistically and effectively respond to regional needs. The ability to form ad hoc relationships, sensitive and adaptive to concerns of regional magnitude, is the essence of such involvement.

3. Establishment of a permanent alliance between the region's formal and informal educational systems to assure an effective, two-way flow of information and services and to attain both the quantitative and qualitative goals of the regional program.

In direct support of the formal educational system, the collective effort of the informal sector can provide immeasurable assistance by:

a. Organizing and promoting the growing

public demand for efforts to develop comprehensive regional environmental education programs.

b. Cooperating with formal education to:

(1) Develop the new, "realistic" curricula that educators and students are calling for.

(2) Share facilities, land, technical manpower and other resources.

(3) Focus regionally conducted and/or supported research on local problems, thereby producing key elements of knowledge relevant to education based on local conditions and issues. Provide assistance to formal education in developing research proposals which will include funding to investigate regional environmental problems.

II. THE SUMMARIZED PLAN

A. THE CONCEPT

Each region has expressed its goals in ways that are specific to the environmental conditions and needs unique to it. Yet, upon analysis, all of them support a plan for total community involvement in environmental education as the most propitious means for achieving its goals.

B. THE PURPOSE

Although expressed in different ways and at different levels of sophistication, the broad goal for environmental education is similar for all regions: To have all persons of all ages achieve that awareness, understanding, and commitment required for effective

action in maintaining and improving environmental quality.

C. THE AUDIENCE

Environmental education is not to be reserved for any particular segment of society nor to any age group. The overwhelming consensus is that the audience must be the region's total population engaged in a continuing learning experience extending throughout each person's life.

D. THE LEARNING MODES

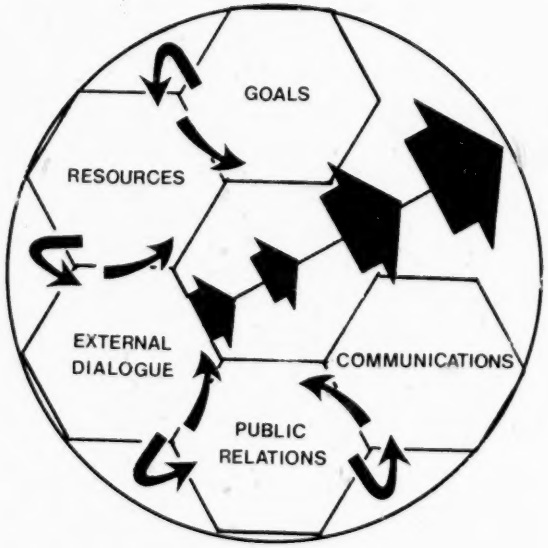
A dichotomy is recognized which makes provision for complete learning experience by identifying two educational pathways, the formal and the informal.

1. Formal Education

Formal education consists of all learning experiences provided by institutionalized education, pre-school through adult, focusing largely on the general problems of environment and their solutions. Formal education is the primary source of generalizations concerning the environment and serves to create awareness and understanding of universal problems through synthesis and induction.

2. Informal Education

Informal education consists of learning experiences derived primarily from local non-institutionalized sources of education including business, labor, industry, agriculture, government, conservation organizations, citizen groups and the media. Informal education focuses on the specific environmental problems within a region as related to universal conditions. It uses the reality of immediate experience and analysis of its findings to corroborate general environmental conditions thereby providing the basis for immediate and personal involvement in their resolution. Its method is primarily analytical and deductive.



CONSTITUTING PROCESS

E. THE PROCESSES

Total community involvement requires three primary processes functioning concurrently and providing mutual support in pursuit of a common goal - constituting, correlating, and coordinating. The first two are primarily the responsibility of the informal educational system, the third a joint venture between formal and informal education.

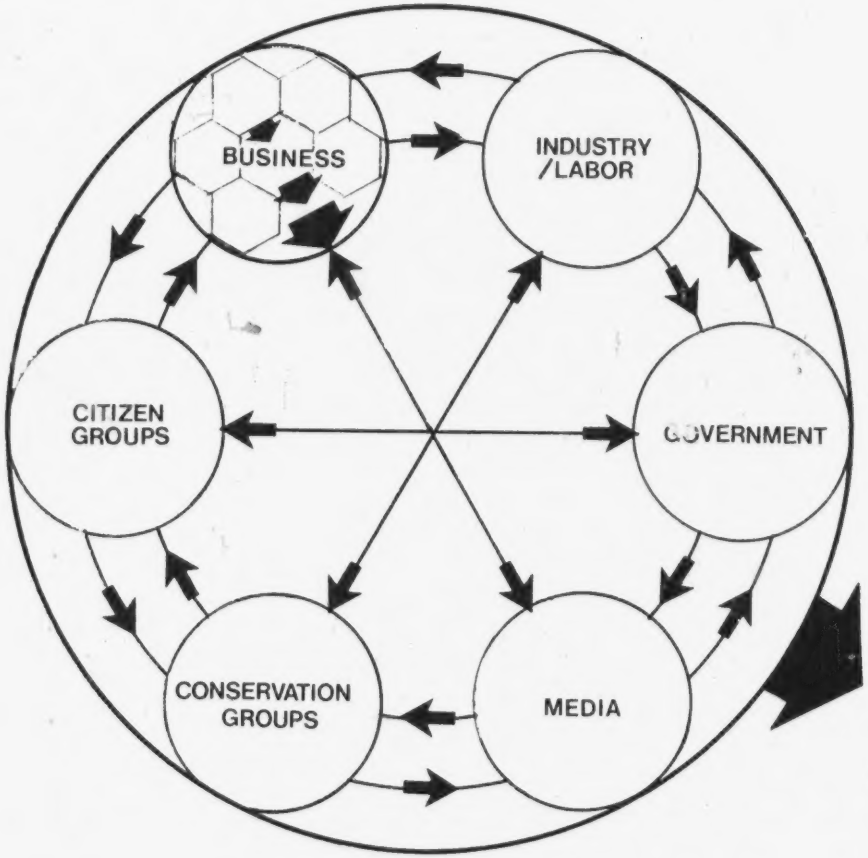
1. The Constituting Process

The process which creates internal structure and organization in each sector of the informal educational system to establish their individual potentials for participating in regional environmental education.

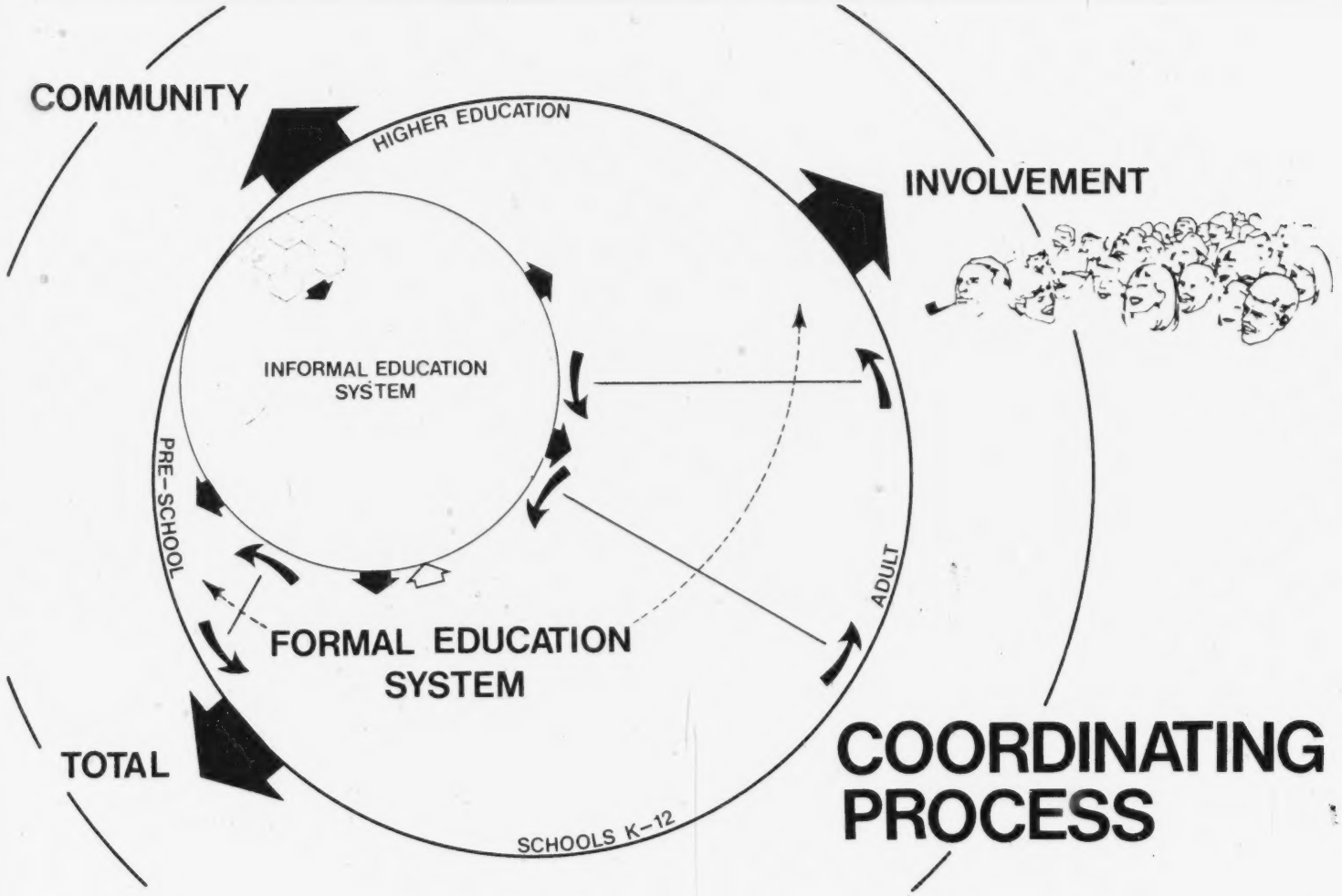
This is largely an internal process employed by the sectors of the informal educational system to assure integrity and precision in their roles and function as a full-fledged partner in the development of regional environmental education. Employing it, each sector of the community strives, individually, to define, improve and enlarge upon its own environmental education potential through continuous review and refinement of its goals and assessment of its pertinent resources. Each sector formulates unique ways whereby it can make commitments to the regional program which are in harmony with community objectives, and yet reflect its own internal interest and policies. The constituting process also composes the techniques which can successfully link each sector of the informal educational system to the other component sectors, thereby assuring the basic integration essential to effective interaction.

2. The Correlating Process

The process which brings the sectors of the informal educational system together in mutual relationship to facilitate their collective interaction in regional environmental education.



CORRELATING PROCESS


COMMUNITY
HIGHER EDUCATION
INVOLVEMENT
INFORMAL EDUCATION SYSTEM
PRE-SCHOOL
ADULT
FORMAL EDUCATION SYSTEM
TOTAL
SCHOOLS K-12
COORDINATING PROCESS

The entire informal educational system acts together to develop the means for achieving unity among its diverse elements in the cause of environmental education. The correlating process seeks to clarify and interpret collective goals for environmental education among its participants. It creates the support base for a variety of learning experiences which can maintain that level of environmental literacy prerequisite to stimulating meaningful citizen action. The bringing of all sources of informal environmental education into mutual relationship is the principal effect of correlation. An important result is the articulation of innovative techniques whereby the informal educational system can coordinate its functions with that of the formal system.

3. The Coordinating Process

The process which brings the formal and informal educational systems together in proper order and relationship to achieve total community involvement in environmental education.

The final link essential to forging a strong and lasting bond between the formal and informal educational systems and thus realizing total community involvement, is that which brings their distinctive contributions together in proper order and relationship. Difficult as this relationship may be to create and sustain, the absence of such coordination will ultimately defeat any truly comprehensive approach to regional development. Coordination requires the establishment of a permanent operating dialogue, identification of shared goals, maintenance of a productive working relationship adaptable to a variety of changing needs and organization of an appropriate vehicle to sustain strength and unity of purpose among the cooperating sectors. Its special challenge lies in inventing techniques which can bring together, in harmonious conjunction, two system traditionally very different in mission and method.

D. SUMMARY

This plan responds to the need expressed through the Commission's regional meetings, that environmental education be action oriented and that it occur at various levels of concern, experience and ability. It recognizes that citizens generally have become aware of environmental problems but, only in rare exceptions, have achieved the level of understanding and motivation necessary to participate in making effective decisions.

The plan identifies the essential role of institutionalized education in delivering the knowledge required for citizens to take effective action. At the same time, it assumes an indispensable role for all components of informal education within the community. It realizes, that to be truly effective, environmental education requires a breadth and depth of learning experience that only total community involvement can provide. The plan, moreover, promotes the utilization of resources indigenous to the region, thereby necessitating only minimum assistance from outside and assuring a high degree of relevancy for the region and its needs. It places primary emphasis for achievement of environmental education on regional organization and suggests that the full development of a multi-level process and its management is the best assurance that a successful program will be created and sustained.

THE AUDIENCE MUST BE THE REGION'S TOTAL POPULATION ENGAGED IN A CONTINUING LEARNING EXPERIENCE EXTENDING THROUGHOUT EACH PERSON'S LIFE.

NEEDS

I. REGIONAL

At several of the Commission's public meetings participants were invited to respond to a questionnaire that contained this question: "What is the single most important resource required to truly advance environmental education in this region?"

The responses were instructive, provocative, and important. To an overwhelming extent, the answers emphasized the basics of all successful human endeavor: concern, understanding, cooperation, trust, communication, sharing, commitment.

This list of conditions, especially in light of the complexity of the task at hand, identifies the ground on which the battle for environmental quality will be won or lost within the regional community. The fostering of these conditions can and should be stimulated and supported at the state level. However, the Commission considers it imperative that a favorable setting for these programs be cultivated and nurtured directly within the local community.

II. STATE

While many of the needs for environmental education in New York State can be met through increased use of available regional resources, better communication, locally-generated support and more coordination and sharing, certain pressing needs remain that can best be answered through state-sponsored assistance.

A. STATE CLEARINGHOUSE

The primary function of a state information clearinghouse would be to refer requests for environmental education information at the state level to appropriate agencies, to facilitate information exchange among regional clearinghouses, and provide

interlocks between regional clearinghouses and appropriate agencies in other states.

Developing techniques of data collection, cataloging, storage and dissemination which could be used in dealing efficiently and accurately with materials from all sources would be a major clearinghouse objective.

Instituting the clearinghouse demands the skills of a group of specialists who would work with state agencies over a period of several consecutive years. Through a highly automated system optimum service could be obtained with a relatively small work force.

B. AGENCY SERVICE COORDINATION

Many state agencies provide services which directly assist regional environmental conservation education. In many instances minimal quality programs cannot be sustained without agency support. The roles and capabilities of these agencies, both individually and collectively, require constant and expert interpretation and synthesis if maximum benefit is to be derived from their use at the regional level.

Two-way channels for information exchange between state agencies and regional programs need to be established through a responsive communications network. Coordination would also assist agencies in defining their roles in regional environmental conservation education -- clarifying expectancies among regional planners, avoiding unplanned duplication of effort, and assuring attainment of the greatest possible multiplier effect through organized cooperation.

C. STATE FUNDING

While some funds for implementing environmental education programs can be generated locally, often a small grant from an outside source is a necessary catalyst to local support. Since federal

and private foundation funding sources for environmental education are disappearing, it remains for the state to encourage projects of obvious worth which have the potential for statewide replicability. Through a small grants program, incentive funds and perhaps some funds for facility development would be provided. Such funds would be dispensed on a regional basis to guard against any one region getting a disproportionate share.

D. RESEARCH NEEDS

To better understand the process of total community involvement in environmental conservation education a research function, using the resources of business, industry, education, and other important sectors of the community, should be performed. Such activity would be coordinated on the state level, but would deal with the real problems of the local community. Through case studies of successful and unsuccessful programs and other research methods needed information on value and attitude formation, ways of organizing and solving problems, and the environmental implications of alternate courses of action could be uncovered.

E. TEACHER CERTIFICATION

There is great variation in the amount of instruction in ecology and environmental education received by teachers prior to certification.

1. All teachers should have at least one course dealing with the principles of environmental conservation and with the relationship of the teacher's speciality to other specialities related to environmental problem-solving.

2. Natural science teachers (earth science, biology) should have at least nine credits of ecology.

3. Teachers of they physical sciences (chemistry, physics), social sciences (social studies, history, geography, economics), mathematics, and English shall have at least 6 credits in ecology.

4. All teachers should have at least three credits in ecology in addition to the course in environmental education mentioned in "1." above. Presently certified teachers should have five years in which to meet these requirements.

RECOMMENDATIONS

I. REGIONAL

A. GENERAL

The following recommendations are beginning points for implementation.

1. That the intensity and extent of present awareness of the need for environmental education should be recognized. It has become a most timely concern, widely held throughout our communities. It is this concern that furnishes the foundation for total community involvement in program development and implementation.

2. That involvement and participation in environmental education should be expanded to embrace business, industry, agriculture, labor, local government and the media as well as the traditional education, conservation and citizens groups. These sectors hold key interests and resources. To involve them only intermittently requesting assistance or support for special projects, is to fall far short of the real need and opportunity at hand, and even risk alienation.

3. That leaders who are new to these affairs should be provided with knowledge adequate for an understanding of environmental education, taking pains, particularly, to help them comprehend the possible roles for their respective sector. Development of this understanding requires citizen involvement and time. Some sectors may require more persistent effort than

others. Some communities face difficult situations of polarization between sectors that must be bridged before meaningful relationships can be established. Once involvement and understanding have been achieved, commitments toward cooperation and sharing may occur. A representative body of regional leaders who understand and respect each others' roles can proceed to accomplish much in mutual support of objective, planning and pursuit of regional goals.

B. SPECIFIC RECOMMENDATIONS

1. That a dependable source of information on regional activities in environmental conservation education be created. This "regional clearinghouse" would provide immediate access to what is actually happening in a region's communities through a small repository of selected programs, curricula, and materials typical of the region; an index of current and projected regional activities; listings of regional resources, facilities, and personnel; and schedules of meetings in any sector of the region relating to environmental conservation education.

   Despite their information collection and storage capabilities, the regional clearinghouse would not be museums or libraries in the traditional sense. Instead they would act as rapid and accurate referral systems, emphasizing where and how to access specific information at primary sources.

2. That each regional community should have a recognized and respected center where continuing provision can be made for the environmental education needs of the

community. The education center would provide a range of programs which reflect the changing priorities in the region as well as those that are of more constant significance and concern. Its programs would deal with both the natural and man-made environments and reveal how these interact and influence each other.

Such a center would go beyond the traditional outdoor or natural history education approach, taking into account the influence of technology on all environments. The "center" might have to encompass a number of physically noncontiguous areas in order to provide, in microcosm, a representation of the region's environmental characteristics.

The regional center would provide learning experiences not normally available through the smaller, simpler, and more specialized facilities of local schools or environmental organizations. Its programs would, nonetheless, complement and extend those of other institutions in the region.

3. That enlightened, imaginative regional leadership in environmental education should be fostered through the creation of regional coordinators. Regional coordination would require persons with highly refined organizational skill and unusual aptitude for establishing communications among the various interest groups involved in environmental education programs. Fostering a spirit of cooperation and sustaining a positive commitment to sharing resources within this unique partnership would be the essence of masterful coordination.

In a more practical vein, coordinators would provide leadership and direction in all phases of program development. Articulation of what the community wants to do; identification of real and appropriate goals; formulation of creative, practical processes for accomplishing program objectives; identification of and access to needed resources; implementation and evaluation would be some of the essential tasks for which regional coordinators would assume leadership and authority. Regional coordinators, while skilled in educational and community processes would serve the region primarily by maintaining community unity and facilitating its effective and efficient functioning.

4. That total programs in environmental conservation education for a region, especially those in the schools, should have the benefit of full-time professional and technical assistance. Such assistance would be regionally based and would provide imaginative and comprehensive guidance in curriculum development, methods and materials responsive to the region's specific needs. The essence of such guidance would be techniques for adapting existing process to satisfy the particular teaching and learning objectives of local programs. A capability for creating original, innovative program and process would be a strong auxiliary attribute.

II. STATE

A. That a temporary Council on Education in Environmental Conservation should be established

within the Executive Department. The Council would be composed of eleven citizens, representing different regions of the state, who by training or experience have backgrounds in environmental education, conservation or related fields. The remaining four members would be the Commissioners of Education, Environmental Conservation and Parks and Recreation and the Chancellor of the State University. The Council would have the following duties:

1. To stimulate and encourage throughout the state an awareness of the problems created by modern civilization's effect on the environment.

2. To develop methodology which could be used by all agencies involved in environmental conservation education for increasing the efficiency with which such agencies respond to public requests for information concerning environmental conservation education.

3. To develop and administer a program of small incentive grants, for local, regional, and statewide organizations, in order to foster creative programs within the field of environmental conservation education. These grants would be awarded for the development of programs, techniques or materials which, once perfected, could be widely employed without continued state support.

B. That a statewide information clearinghouse should be established in the Department of Environmental Conservation to increase the efficiency of information collection, storage and dissemination to the general public. The clearinghouse would maintain information on, but not limited to, the following:

1. Natural resources and facilities useful for educational purposes.

2. Conservation and environmental organizations, public and private.

3. Resource personnel.

4. A calendar of environmental education events.

5. Curriculum resources.

C. That the position of Regional Coordinator for Environmental Education be established within the Department of Environmental Conservation. The coordinators would be charged with facilitating and coordinating environmental education on the regional level; disseminating information on regional environmental education resources; clarifying and routing requests for information on environmental education; assisting the residents of each region by providing expert advice on organization, planning, design and implementation of environmental education programs; and helping to foster region-wide cooperation.

D. That Regional Environmental Education Centers should be established as rapidly as possible by the Department of Environmental Conservation. These centers would be located strategically throughout the state so that each resident would have easy access to one or more centers. Each regional coordinators would work at the center in his area, using it as his base of operations.

E. That the principles of environmental education should be incorporated into formal education wherever possible. The Commission has identified two approaches to this goal:

1. Elements of environmental education should be integrated into the present curricula of all schools. The Commissioner of Education would review and revise existing curricula for all grade levels and all subjects to provide, to the fullest extent

possible, instruction in environmental education and to assist in the development of new materials and textbooks which incorporate the curriculum revisions and current developments in the field of environmental education.

2. The Commissioner of Education should prescribe courses of instruction in all elementary and secondary schools, designed to create an awareness of the importance of maintaining natural life-support systems, the extent to which they have been threatened by the life styles of modern society, and the necessity of evaluating alternative courses of action for insuring the wise use of these resources.

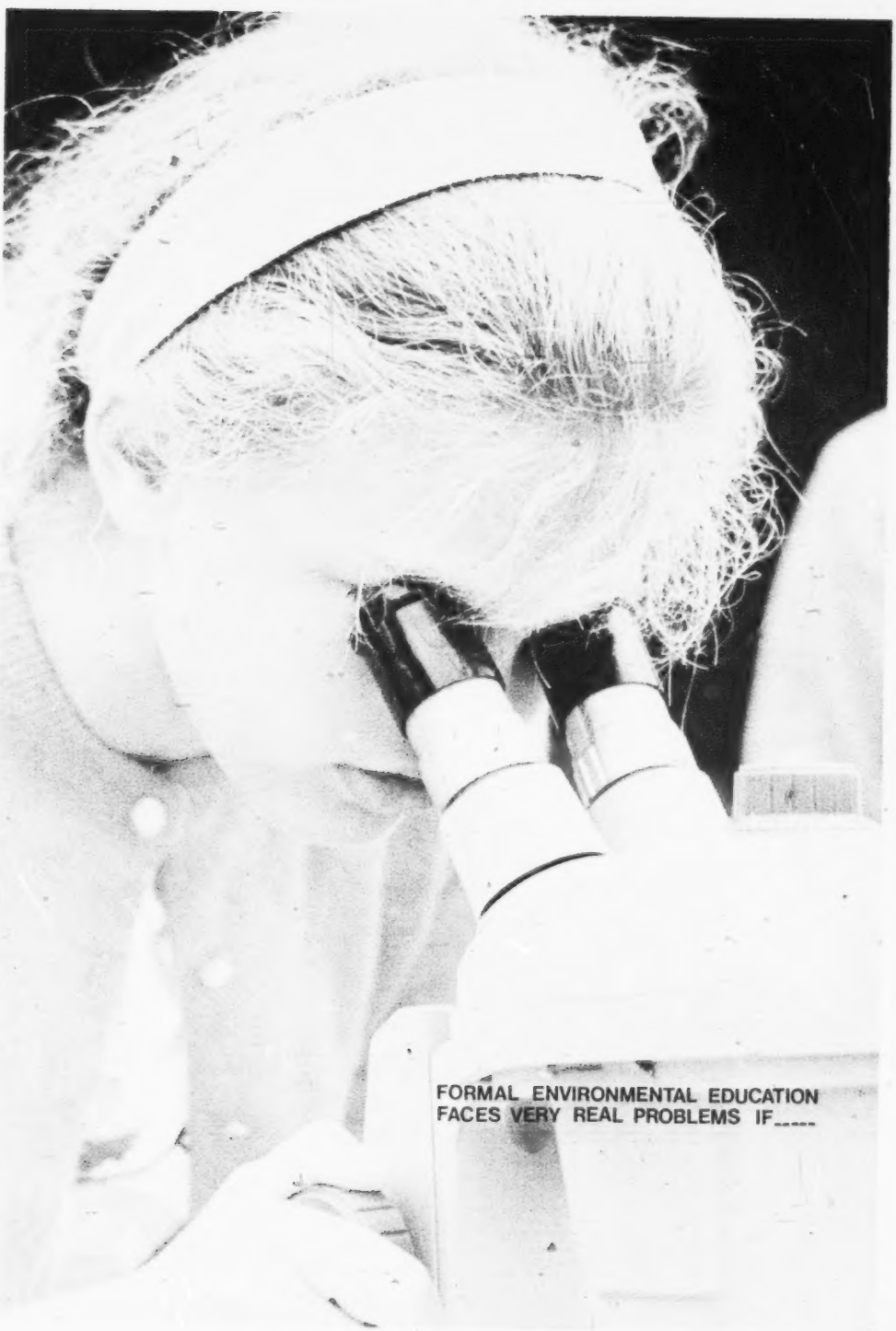
ENVIRONMENTAL EDUCATION REQUIRES A BREADTH AND DEPTH OF LEARNING EXPERIENCE THAT ONLY TOTAL COMMUNITY INVOLVEMENT CAN PROVIDE.

SUMMARY RECOMMENDATIONS

I. That the Legislature and the Governor, in their wisdom, take firm and decisive action toward a) establishing state level leadership and direction to environmental education, and b) providing our regional communities the minimum tools essential to coordinated environmental education program development and implementation.

II. That the citizens, leaders and professionals who have worked with the Commission in 1972 and 1973 continue their efforts to involve the total community in environmental education and that citizens in the other regions attempt to enlist the full complement of regional resources in this task.

III. That all citizens, leaders and professionals having an interest in environmental education look anew at resources immediately at hand within their respective regions and try to bring them into service for program development and implementation by means of the process we have set forth under the concept of <u>total community involvement</u>.


FORMAL ENVIRONMENTAL EDUCATION
FACES VERY REAL PROBLEMS IF_____

SUBSTANTIAL, SUSTAINED SUPPORT
DOES NOT SOON BECOME
A REALITY.

Photos by - Cornell University
Dept. of Environmental Conservation
New York State United Teachers

APPENDICES

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ADIRONDACK MEETINGS

THE REGION

The five counties of Hamilton, Franklin, Warren, Clinton and Essex, which were represented at the Commission's Adirondack meeting series, are characterized by a largely forested landscape, a low population density and an abundance of natural resources. Much of the region falls inside the Blue Line of the Adirondack Park. Within this boundary, uses of state-owned land are strictly regulated and future control of privately-owned land seems assured. Residents and property owners within the Park are concerned about outside intervention, particularly when "environmental interests" may interfere with the highly valued rights of the individual to plan his life and use his property.

Idea exchange and coordination of activities and resources are difficult throughout the region. Transportation and communication systems were not originally designed to service residents of the outlying areas, and even today the spheres of influence of the small urban centers do not extend far beyond their borders. Environmental activities are often initiated to solve specific local problems and satisfy individualized interests. Duplication of effort and less than optimal levels of program development often result from this isolated activity.

Environmental concerns take second place to economic necessity in the low-income areas of the region. The tourist industry is expanding each year as more people come to the area pursuing recreational activities. Tourists create a demand for goods and services and bring needed income to the area. At the same time they place real stresses on the region's environment. From the High Peaks Wilderness to Canada Street, Lake George, the tourist trade is posing serious questions for local residents.

Despite the handicaps, there seems to be a growing recognition that environmental problems and their solutions are remarkably similar throughout the region.

This realization has sparked new efforts at better coordination within the region. Continuing economic problems, however, require multi-community or regional cooperation. Coordination of such efforts is still needed through central information referral centers if dissemination of information and provision of environmental advisory services is to be realized.

MEETING FORMAT

Early discussions with environmental educators of the region established three basic objectives for initiating total community involvement in environmental conservation education. These were:

1. To establish basic communication among interested and involved people from the region.

2. To locate and assess resources for environmental conservation education in the region.

3. To initiate the first stage of planning for environmental conservation education within the participating counties as well as within the entire region.

These relatively basic objectives were set for the conference sessions in response to a locally-derived assessment of the present status of environmental conservation education in the region. The Commission hoped that by going through these preliminary steps with residents, it might motivate some participants to carry out design and implementation on their own. Several groups, organized as a result of the meeting series, are now pursuing action programs in environmental education.

A series of three meetings was held at the Miner Institute, Chazy, New York to achieve these objectives. The first meeting was devoted to training a small group of regional leaders to work with participants in subsequent meetings. A panel of Adirondack experts gave an overview of the ecology, cultural geography, politics, and environmental problems in the region. This was followed by a review of objectives for future meetings and a question and answer period.

A full day working meeting on January 25 centered on large group presentation/discussion sessions interspersed with workshops. Regional concerns were discussed in the large groups while small group discussions focused on objectives appropriate to the individual participating counties. Three weeks elapsed between this session and a half-day session on February 15 to allow for "back-home" planning by the county groups. The activities and recommendations of county groups were reported back to all participants at the February 15 meeting. Their findings were then synthesized in an attempt to define the "state of the art" in the region. Both individual plans of the county groups and the embryonic model for the region were presented at two public hearings held at Chazy and Lake George on February 26 and 27, respectively. At that time, wider regional comment and input were sought.

In conjunction with the meeting series, a preliminary inventory of resources for environmental education was prepared under the Commission's auspices by Plattsburgh journalist Irene Guibord. It is believed to be the first such listing ever compiled for the five-county region. In preparing the inventory, more than six hundred individuals and organizations within the region were contacted in person, by phone or by mail. They were asked to describe environmental education programs underway or planned, to point out problems in the field, to identify useful resources and to provide sample materials if available.

The information collected has been indexed by program or resources for individual counties and/or the region. Programs are divided into three basic kinds: school, community organizations and industries. Resources are identified as people, facilities, materials, field trip possibilities and general resources. It is hoped that copies of the inventory can be made available to all potential users. The actual materials collected have been deposited at the Miner Institute where they are accessible to the public.

In the time at the Commission's disposal the preparation of the inventory provided the most realistic

and productive way of assessing existing programs and resources in the region. At the same time its creation gave the region its first comprehensive guide to programs and resources, providing a tool of recognized value for present and future planning.

PARTICIPANTS

Regional leaders from industry, business, government, agriculture, civic groups, education and the non-teaching scientific community attended both the initial workshop leaders meeting and subsequent sessions. They represented the main public and private interests in the five participating counties. The education director of Miner Institute, Dr. William Lawrence, and the director of the Man and His Environment program, Dr. William Berberet, performed a major leadership function throughout the conference.

The meetings attracted proportionately large representation from public education and conservation organizations. Others who took an active role were representatives of major paper companies, several planning board representatives, town and county supervisors and Assemblyman Andrew Ryan.

EXISTING PROGRAMS

From a preliminary assessment of programs in the five-county region there is evidence that environmental conservation education is becoming part of the school curriculum. Although most schools report no formal environmental education courses being taught, the environment is a primary topic in many sciences, social studies, mathematics, health, English and home economics courses. As one teacher stated, "No one teaching in the Adirondacks can overlook the importance of conservation, game laws, fishing limits and refuges."

BOCES appears to be a primary agent for educational programs in environmental conservation. In the Clinton-Essex area, the Board offers a two-year occupational training program for 11th and 12th grade students using facilities of the school forest land, state parks and the Georgia Pacific pulp and paper mill. In the southern

part of this BOCES district programs are offered in fields such as recreation, logging, pollution control, wildlife management, nursery practices and silviculture.

It appears that the elementary school program is generally more adaptable to teaching environmental education because of the greater possibility of flexible scheduling to allow for frequent field experiences. Many middle and high schools are also experimenting with outdoor education programs, however.

The Peru Central School provides a variety of field trips for sixth grade children to study the principles of ecology, wildlife management, environmental practices and soils and plants. The Peru Parks and the Macomb Reservation are used year-around as outdoor study areas for science and social studies classes. Both the local conservation officer and the Lions Club have provided significant assistance to this school district.

Ticonderoga Central School and Schroon Lake Central School have developed special units in environmental education for their elementary school classes. Minerva has an outdoor education program, K-12, for some 300 students. The school employs a supervisor of outdoor education and conducts special spring and fall programs in its outdoor laboratory.

Brushton-Moira Central School in Franklin County includes two 20-week courses, one in ecology, the other in conservation, in its curriculum. The ecology course for grades 10-12 deals with ecosystems, ecological populations and communities, and current issues with special focus on the Adirondack Land Plan. The conservation course for grades 9-12 emphasizes such topics as soil conservation, wildlife management and local pollution problems.

Indian Lake Central School in Hamilton County involves some 300 students in grades 4 through 12 in a conservation and ecology program which is part of the health, geography, science and English curriculum.

In Warren County, the Glens Falls City School District offers one-semester courses, grade 11, on man and his environment and in advanced ecology. Special speakers, audio-visual materials and field trips are used in conducting this program.

Citizens groups in the region, especially in the university community of Plattsburgh, have periodically tackled environmental problems - - investigations of water quality in Lake Champlain; recycling projects; land-use evaluations. Public education has often resulted from these projects.

As a result of Commission meetings several additional projects were designed and planned. A number of these are now in the early stages of implementation. The Piseco Elementary School in Hamilton County is organizing a student exchange program with Eagle Hill Junior High School in the Syracuse suburb of Manlius. The program is designed to give students from two very different environments a chance to interact with each other and thus broaden their world-view.

A group of citizens in the Plattsburgh area, spearheaded by Dr. Charles Mitchell of the Audubon Society, is investigating the possibility of creating an environmental education center at Lake Alice, a nearby Department of Environmental Conservation game management area that is currently being converted to a less highly managed area. A packet of material, complete with aerial photographs, maps and ecological information, has been prepared on the area and will be used in an attempt to persuade the Department of Environmental Conservation to emphasize environmental education rather than wildlife management at the area.

Other proposed projects, which are still in the design phase, include using educational TV to increase environmental awareness and incorporating environmental education into the curriculum of the middle schools in the Tri-Lakes Area of Franklin and Essex Counties. Existing CATV systems, through public access channels, are seen as potentially useful avenues for establishing dialogue and exchanging views among subscribers. The

potential of Cable TV in the large resort areas for influencing the transient population of recreationists is also of high priority among many residents.

NEEDS

All conference activities pointed to a definite need for local and/or regional coordination of programs and resources. The contacts initiated through the workshop and the materials contained in the inventory were first steps in this process, but to be effective coordination must be continued through a central facility. Whether called a referral service, a clearing house or a regional environmental education center, the facility's primary function would be referral and coordination. It would refer inquiries to appropriate environmental specialists and provide information on successful programs, teaching aids and materials and facilities suitable for environmental education experiences.

The schools throughout the region are exploring ways of increasing student awareness of the environment through integrated educational programs. Teachers feel strongly, however, that they need additional skills, facilities and materials to deal adequately with their new teaching responsibilities. Pre- and in-service training courses are seen as particularly important.

The region seeks a comprehensive approach to environmental education through programs which involve the entire community. However, many of the projects they see as worthwhile and important require outside funding for program development and implementation. Because of the unusual characteristics of the Adirondack region, participants feel that any new funding for environmental education in New York State should be awarded on a regional basis. In this way they hope to avoid all money going to sections of the state most skilled at grant proposal writing.

A fourth need, less often expressed and perhaps only partially recognized, concerns the shifting of emphasis from conservation education to the more

inclusive education in environmental conservation. This is a difficult task in an area where conservation of natural resources is such an obvious need and other environmental problems are relatively inconspicuous. In order to avoid the degree of environmental deterioration now being felt in other parts of the state and nation and to heighten awareness, interest, and appreciation of the Adirondack environment such a shift of emphasis is extremely important.

ALBANY CONFERENCE

THE REGION

For the purposes of this meeting the Commission solicited participation from a four-county area around the Capital District. Included at the conference were residents of Albany, Schenectady, Saratoga and Rensselaer Counties. Activities in these counties seem to center around the major cities of Albany and Schenectady, the satellite cities of Troy and Rensselaer, and the surrounding suburbs. Also exerting influence in the surrounding area to a lesser degree is the city of Saratoga Springs.

The environmental problems of the Capital District have not yet reached the severity or complexity of those in New York City. Residents, nonetheless, seem able to sense a general lessening of the quality of their environment and are eager to learn more about their relationship to natural life support systems. Frequent topics of discussion are industrial pollution, solid waste, air pollution and suburban sprawl -- all concerns of a region with a metropolitan or urban character. Yet, except in the heart of the major cities, the region still offers the opportunity for developing nature centers and other outdoor educational experiences with more ease than is possible in highly urbanized areas. Considerable interest is shown in this kind of environmental education development, and the most sophisticated local development, the Five Rivers Environmental Education Center, is well-used by school groups and individuals.

The Capital District is the home of several major businesses and industries. Among these are General Electric, Atlantic Cement, Niagara Mohawk, Tobin Packing, Huyck Felt and Fuller Brush. Some of these may be able to help further the goals of environmental education.

Perhaps the most distinctive characteristic of the Albany area is its status as state capital. Access to state legislators, the governor, and state agency personnel should be easier for residents of this area

than for residents of any other part of the state. Despite this physical proximity to legislative process, however, relatively few people seemed actively engaged in lobbying or otherwise making their needs and desires known to the state.

MEETING FORMAT

Since Albany is the state headquarters of the New York State United Teachers Union and since area schools had voiced a great deal of interest in environmental education, Commission activities in this region focused on the role of the school in achieving total community involvement in environmental education.

In cooperation with the New York State United Teachers, the Commission sponsored a two-day conference at the State University of New York at Albany with the following objectives: to provoke a greater awareness of the need for environmental education; to provide information on available resources; to explore how the schools and the community could initiate and work cooperatively on educational environmental conservation.

Following a survey of schools in the four-county area, six school systems with an interest in environmental education were selected to participate in the conference. They were asked to send a team of teachers, students, administrators, and school board members to the conference. Also invited were representatives of business and industry, conservation, local government, labor, citizens groups and state agencies.

Specialists in environmental conservation from throughout New York State were also invited to provide guidance and information to other participants. The specialists included John Weeks of the Rogers Conservation Center in Sherburne; Irene Shapiro, an environmental curriculum development specialist from the Bronx High School of Science; William C. Ritz, Director of the Environmental Studies Institute of Syracuse University and a specialist in teacher training; Robert Nurnberger, Department of General Studies at SUNY-Albany and a leader in Five Rivers Limited, a citizens group which was largely responsible

for establishing the Five Rivers Environmental Education Center at the old Delmar Game Farm; Dr. Edgar Reilly, a zoologist and curator of the New York State Museum.

The conference format, which consisted of both small and large group discussions, was designed to promote communication among various interest groups within each county and to provide opportunities to share ideas and information with those from other parts of the region. A large portion of the conference was devoted to small group discussions among people from the same county. These groups were asked to review the current status of environmental education activities in their areas --what has been done; what is being done; what needs to be done. They were then asked to begin formulating plans for expanding these activities or initiating new ones. They were to identify the facilities and other resources available for use in these activities and to consider the political, economic, social and legal constraints involved in program implementation. Finally they were asked to evaluate their thinking and to identify the logical steps to take in order to achieve the desired outcomes. At the conclusion of each stage of program development, a representative of each group gave a progress report to the entire group. Additional comments and ideas were solicited from this larger group.

Although the original conference format called for some opportunity for like interest groups from throughout the region to meet, conference participants requested that they be given even more time for exchanging ideas with their peers from other parts of the region. This request was acknowledged during the conference. Opportunity for conversation and informal meetings was also provided during meals, with participants being urged to sit with people from other counties.

GROUPS PRESENT

Because of the intensive group interaction which the Commission hoped would come from the Albany conference, only 100 invitations were extended. Each of the selected school districts was asked to send a

team of eight -- two administrators, one school board member, two teachers and three students. The remaining participants came from business and industry, labor, conservation, local government and citizen groups.

The Commission realized that a two-day conference would pose hardship on some groups with whom environmental education was an avocation rather than a vocation. They felt, nonetheless, that the benefits to be derived from an intensive two-day experience were considerable. They, therefore, discouraged participation for less than the full two-day period.

Despite the time demand, 77 persons attended the conference. All invited schools were able to send either six, seven or eight participants. Although the Commission had prepared a list of "second choice schools," anticipating that some of the initial invitees might not be able to participate, none of these had to be used. Business representatives included General Electric, Niagara Mohawk and Atlantic Cement. Local government officials were most often representatives of municipal environmental advisory councils. Labor was represented by the New York State United Teachers. Professional conservationists included representatives from the Department of Environmental Conservation and the New York State Museum. Representatives of area colleges and universities and several environmental studies students from SUNY-Albany also attended. Although many citizen groups expressed interest in the conference, only a few were able to participate because of their inability to obtain released time from their regular jobs.

ON-GOING PROGRAMS

Environmental education activities in the four-county area vary widely in their degree of sophistication and level of development. Some groups are already operating highly refined interdisciplinary environmental education programs. Others have attacked one or two specific environmental [illegible]s.

Still others have not yet moved beyond the initial stages of planning and development.

The Schodack Central School, with the support of a grant from the federal Office of Environmental Education, has developed an interdisciplinary course in environmental education which provides an opportunity for students to conduct individual research on environmental problems using the total community as their laboratory. The course uses team teaching with five teachers from different disciplines involved in the program. The group is now exploring ways to continue their program when federal funds are exhausted.

The Schenectady School System has successfully conducted an "ambassador program" for the past few years. In this program, high school students with an interest in environmental problems are actively involved in teaching environmental awareness to students in Schenectady elementary schools. This interaction between different age groups, under the guidance of both high school and elementary teachers, has helped foster greater concern at all levels.

Five Rivers Environmental Education center, which has been developed through the efforts of citizens' groups and the Department of Environmental Conservation, is now available for use by school groups and the general public. While its programs and facilities are still being expanded, it offers the potential for sophisticated programs which address the needs and concerns of many different levels of the society.

Other groups are still wrestling with the difficult task of selecting a worthwhile environmental conservation project which can provide a true educational experience. Some discussed the feasibility of conducting recycling operations -- and put emphasis on how to make these activities more than simple mechanical tasks. Others were looking for more productive ways to use natural areas in close proximity to the school. Still others felt that they had to create a better understanding of wise and poor land use in their community.

By working through the conference format, many groups discovered that the full potential for environmental education in their area could be realized only through total community involvement. School programs developed without involving the community usually met with limited success. At the same time, community projects could be enhanced by involving the schools in their planning, design and implementation.

NEEDS

At the planning and design stages in which most of the participants at the conference were involved, many obstacles to implementation were brought to light. Some of these could be overcome through better use of existing resources. Others, however, were thought to be most appropriate for the state to overcome.

Participants felt that they had to make both science and non-science teachers aware of the importance of environmental education. By looking more carefully at their schools' organization they felt that they might be able to achieve more flexible scheduling, an essential ingredient in accommodating a greater number of field trips and more individual projects conducted on school time. Lack of transportation, liability problems and lack of suitable environmental education facilities close at hand were also frequently cited as problems which the local community could make at least some attempt to solve. Students, in particular, voiced a desire to know about activities of environmental clubs and environmental education programs in neighboring school districts. They felt that they had made enough contacts through the conference to begin the development of a communications network of their own.

Several groups in the larger community, particularly local conservation advisory councils, private conservation and civic groups, and business and industry were seen as good potential sources of assistance for environmental education programs. Presently, however, conservation advisory councils seem concerned primarily with land-use and other environmental problems which often lack an educational emphasis. Citizens groups also tend to engage in environmental problem-solving without

any concerted effort to stress the educational aspects of specific projects. Business and industry repeatedly told the Commission that while they had a real interest in environmental education, they did not have the ability to contribute large sums of money to environmental education efforts. They did voice a willingness to conduct tours of their facilities, to help provide technical data for the use of schools and to assist, in a limited way, with research efforts. They also urged that schools, through their guidance departments, make students aware of the opportunities for environmental technicians which exist in industry.

The job of providing environmental education for every person regardless of age or geographic location was large and complex, conference participants realized. Even using available local resources to their full extent certain needs emerged which could best be satisfied on the state level. Among these needs were: a liberalization of the state-aid ratio for schools so that more funds would be available to implement proposed projects; a revision of the school transportation aid formula, especially for city school districts which have to travel long distances in order to give students valid outdoor experiences; a small grants program through which schools would be able to obtain basic materials, resources and equipment to initiate new programs; a clearinghouse or other resource center to sift through available information and maintain it in a readily accessible form; fellowship grants for teachers to pursue studies of environmental science; better in-service educational programs in environmental conservation for teachers; greater show of concern, support and assistance from the State Education Department in the development of curricula for environmental education; more extensive use of all types of communications media, including cable TV, to develop public awareness of the need for environmental conservation. Some participants also suggested that a new type of tax levy for the support of environmental education be instituted, but others pointed out serious difficulties with this approach.

The Albany conference produced a good deal of interaction and idea-exchange and provided the

Commission with much worthwhile information. Perhaps the most significant outcome of the conference was the enthusiasm for continuing the development of environmental education activities using the full range of capabilities which the region already possesses. Participants felt that if state assistance were forthcoming, the region should be prepared to use the help wisely.

CENTRAL NEW YORK REGIONAL SEMINAR ON EDUCATION
FOR
ENVIRONMENTAL ACTION

January 19, 1973

THE REGION

The Central New York meeting, held in Syracuse on January 19, 1973, drew representatives from the five-county planning region of Cayuga, Cortland, Madison Onondaga and Oswego Counties. Syracuse, in Onondaga County, is clearly the "core" city in this region. A metropolitan area of nearly a half-million people, it contains two educational institutions of major state and national prominence, several regional offices of state government, and major business and industrial corporations. These characteristics, combined with a central location in the region, contribute to its considerable influence throughout the five-county area. Each of the other major cities in the region (Auburn, Cortland, Fulton, Oneida and Oswego) also has its own sphere of influence under the umbrella of the core city.

Within the region great variations in population density, industrialization, topography, historical tradition and income level are obvious. Virtually all levels of development, from inner city to productive farmland can be found, but a definite trend from rural to urban land use is occurring.

To help meet the changing needs of the region, the Central New York Regional Planning and Development Board was created by the five participating counties in 1966 to serve as the official government agency for regional planning. All the counties, except Madison, also have environmental management councils. There are currently twelve local conservation advisory councils, all but two of them in Onondaga County. Syracuse is a regional headquarters for many state agencies including the Department of Environmental Conservation, the Office of Local Government, the Department of Transportation and the Office of Parks and Recreation.

Regional organization and activity were strengthened by the United States Department of Agriculture's six year educational experiment known as the MIDNY (Mid-New York) Project. The Cooperative Extension Agents who participated in this program constituted a ready cadre of specialists able to create a sense of regionalism and an understanding of regional planning concepts in their audiences. Under an environmental ecology grant by the U.S. Department of Agriculture to the College of Agriculture and Life Sciences at Cornell, the MIDNY Project undertook a study of the Owasco Lake Basin. They also set up committees to study environmental decision-making, conservation education in New York, the Onondaga County 4-H high school environmental education series, and environmental management councils. Working papers describing and evaluating each of these activities have been published. Although the MIDNY Project has ended, Cooperative Extension's Community Resource Development program is still actively conducting regional education activities.

THE FORMAT

The Central New York seminar was planned and organized by twenty-two regional leaders representing business, education, conservation, local government and citizens groups. A majority of seminar participants came from the Syracuse metropolitan area. All five counties in the region, as well as several counties outside the region, were represented at the seminar as well.

Following opening remarks by Dr. John A. Gustafson, vice chairman of the Commission, the 168 participants discussed the seminar's theme, "Education for Environmental Action." During the first hour small groups of people with similar concerns and interests met to discuss current regional activities in environmental education. Representatives of the six major community sectors involved in the conference then presented resumes of regional activities which were supplemented by comments from seminar participants.

Presiding in the afternoon, Senator Bernard C. Smith, Commission chairman, led discussion on the need

for regional coordination and on the resources required to implement environmental education programs. Dr. Gustafson presented the Commission's draft plan for coordination of environmental education, and, in response to it, Martin S. Anderson of Cooperative Extension, reported that the MIDNY program experience suggested many conditions in the region favored achieving coordination.

Results of the seminar were assembled and evaluated by institutions and agencies prominent in organizing the seminar itself, guided and assisted by many of the same people who had been responsible for developing the meeting format. Proposals for a plan were then circulated for review by a larger group drawn from throughout the region.

ON-GOING PROGRAMS

Boards of Cooperative Educational Services (BOCES): Each of the BOCES in the five-county region has an active environmental education program. The Onondaga/Madison BOCES is now ready to teach a two-year course in waste disposal technology and has developed several media kits on environmental topics. The Cayuga County BOCES is running a course in conservation, emphasizing elementary forest management and soil and water conservation. A farm, owned by this BOCES, is being developed as an environmental education center. The Oswego County BOCES has received funding for a student study of Little Sandy Creek. If the river meets certain criteria, it could be protected under the New York State Wild and Scenic Rivers Act. They currently are seeking funds for an imaginative approach to career exploration for eighth grade students, concentrating on environmentally significant careers. The Cortland BOCES is putting its emphasis on environmental education in grades 4-6. In this program, fourth graders are introduced to basic environmental concepts in and around their schools. The fifth graders are given a day-camp experience with an environmental emphasis. Sixth grade students participate in an over-night camping experience which reinforces concepts of environmental education.

Private Conservation Organizations: During October, 1972, the Junior League of Syracuse conducted an integrated classroom-outdoor educational experience for fifth grade students in the Syracuse City schools. League members conducted orientation sessions in the classroom and then took students to the Beaver Lake Nature Center in the nearby town of Baldwinsville for guided field trips by nature center staff.

As yet, especially in Onondaga County, this kind of educational activity is not usually undertaken by active conservation groups such as the Audubon Society, the Sierra Club and the Clean Air Committee of the Tuberculosis and Respiratory Disease Association. The Audubon Society funded an education committee in 1972, but discontinued it in 1973 because it had not expended any of its funds. In general, education has occurred as a "spin-off" of other environmental action projects. For example, a survey of political candidates was conducted and published before the 1972 election as a device for informing the public of both important environmental issues and the candidates' position on them. Education occurred as a result of this project, but its primary purpose was to gain support for "environmental" candidates.

The Wild and Scenic Rivers Study being developed by the Oswego BOCES was first proposed by an environmental group as a means of getting a valuable natural area protected. The educational implications of the study were seen as important, but secondary, by the environmental group.

Finally, Save the County, a fund-raising group which mobilized several thousand Onondaga County residents last year in an attempt to acquire valuable natural areas, stressed the educational component of its program in talks and other outlets. Its primary goal, however, was land preservation with educational considerations secondary.

Coalitions: The Onondaga Federation of Sportsmen includes 35 local clubs. It publishes a monthly newsletter and conducts courses in hunter safety, survival and related topics. It is the largest and most

organized group with an environmental interest in the county.

In the last several years there have been frequent attempts to establish clearinghouses, coalitions, referral services and the like throughout the region. However, except for such groups as the Federation of Sportsmen Clubs, 4-H and Scouts, they have had only limited success.

Environmental Education and Nature Centers: The Rogers Environmental Education Center in Sherburne, just outside the region's boundary, offers a variety of programs and serves a wide audience. It provides opportunities for extended environmental studies through its over-night facilities as well as for shorter visits. Beaver Lake Nature Center in Baldwinsville, Onondaga County, represents a unique cooperative arrangement with the land and facilities owned by the county and programs conducted by a private, non-profit group, Onondaga Nature Centers, Inc. Begun as the result of more than six years of concerted effort by many individuals and citizens groups, the center is now in its third year of successful operation. The Central New York Parks regional office is now considering a major nature center at Clark Reservation State Park. A minor interpretive center may also be developed by interested citizens or by the state at the Clay Marsh in Onondaga County. These areas are augmented by smaller sites at many schools in the region.

Educational institutions: The State University of New York College of Environmental Science and Forestry at Syracuse, as signified by its new name, offers a variety of programs with environmental emphases. In addition to professional-level courses in environmental sciences, it sponsors evening educational programs for students and the general public on such topics as wildlife ecology, wildflower identification and bioethics. The college also provides a speakers' bureau, an environmental film library and tours of its facilities. It plans to expand its role in environmental conservation education and constantly to update its programs to meet new environmental challenges. President Edward E. Palmer

of the college told the Commission that the institution will emphasize training a cadre of specialists in environmental problem-solving.

Syracuse University's Environmental Studies Institute is offering an environmental education program for 20 science and 20 social studies teachers from the northeastern states this summer through a grant from the National Science Foundation. The Environmental Studies Institute works with local schools and citizens groups on environmental action projects; maintains an environmental education library; holds summer institutes for teachers which emphasize ecology and geography; conducts an eight-session adult education program on "Environment and the Human Future."

NEEDS

A. Needs or goals relating to education, most specifically, in public schools:

1. Curricula relevant to the real world; study programs which develop sensitivities using local environmental management problems and situations; encourage outdoor education; employ real-life experiences, with special attention to approaches and methods, to stimulate interest and generate the desired action.

2. In-service education for teachers - develop both introductory and basic "know-how" courses and advanced programs for those who wish to specialize in the field.

3. School board policy statements on environmental education - work for the adoption of policy statements similar to the one adopted by the Union Springs Central School (Cayuga County).

4. Strengthen ties between schools and youth organizations (4-H, Scouts, etc.) and between these groups and organizations supporting youth programs, e.g. Kiwanis.

B. Needs for regional communication and coordination:

1. A regional organization with a regional coordinator - a simple regional plan to coordinate activities; facilitate program development; support and promote environmental programs. A regional support staff, in addition to the coordinator, could assist in training teachers and adults and in improving communications among all sectors of the society.

2. A regional center for information exchange - a clearinghouse is needed to improve communications among environmenal groups and screen and disseminate information on proposed environmental education legislation.

3. More local environmental education centers - located within easy reach of the region's population. Costs should be shared by the state and local community to insure commitment on both levels.

C. Other regional needs:

1. Use television and other media for broader coverage of environmental issues.

2. Develop more outdoor education centers at the local level.

3. Conduct fund-raising campaigns within the region for environmental education programs and projects.

4. Make all environmental education programs action-oriented.

5. Encourage concerned groups to unite in a strong citizens' lobby for environmental conservation.

6. Encourage the development of a common philosophy which will provide a sense of direction for all environmental groups.

7. Encourage state agencies to provide more leadership and assistance to existing environmental groups through better coordination of their services.

THE GENESEE/FINGER LAKES
REGIONAL FORUM ON THE STATUS OF ENVIRONMENTAL EDUCATION

January 25, 1973

THE REGION

Monroe County Community College, Rochester, served as the site for the Genesee/Finger Lakes Regional Forum. The region, comprising eight counties (Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne and Yates) borders Lake Ontario for 90 miles and extends 50 miles south of the Lake. Rochester, the central city, is the region's hub. About 3,546 square miles in area, the region has two major landforms: Lake plain and northern fringe of the dissected Alleghany Plateau.

The Genesee and the Oswego Rivers drain most of the area. The Lake Ontario shoreline in Orleans, Monroe, and Wayne counties is made up of a variety of interesting features of geological, ecological and aesthetic value. The shoreline is a mixture of bays, ponds, marshes, beaches, rocky headlands and bluffs. The flatlands of river and creek flood plains, as well as swamps of the region, present drainage and flooding problems to agriculture and development. The steep slopes of the Finger Lakes valleys and the glacial drumlin belt of Wayne and Monroe counties, must be treated with care by farmers and developers to avoid erosion.

Climatic features of the area are derived largely from the procession of high and low pressure flows from the Mississippi Valley and Great Lakes down the St. Lawrence Valley. The fruit belt along Lake Ontario and the vineyards of the Finger Lakes owe their existence to the moderating influence of these water bodies. The growing season is extended in autumn and delayed in spring, preventing frost damage to budding vegetation.

The Regional Planning Board has completed a report which describes general soil types and their distribution. Town and county planning reports, plus detailed surveys, describe soil suitability for uses such as agriculture, residential development, commercial development and septic tanks.

The majority of the region's population lives in Rochester and the suburban towns of Monroe County. Growth centers, major highways, and strip frontage, however, extend out over much of the eight-county area. Farmlands are giving way to housing tracts; planned unit developments and two new towns, Riverton in Monroe County and Gananda in Wayne County, are under way; lake shores are dotted with more and more summer cottages and year-around homes.

Seekers of recreation homes now place heavy demands on the region's lakes, rivers and wetlands, The Finger Lakes and Bristol Hills are the focus for these pressures with the Lake Ontario shoreline, and its several bathing beaches, running a close second. More than 100 small boat marinas can be found along the Barge Canal which traverses the region east-west, connecting to the Finger Lakes.

Valuable wetland areas exist in the region, particularly in the bays and ponds of the Lake Ontario shoreline; also, extensive swamps and marshes are present at Oak Orchard, Bergen and Montezuma, and in the Finger Lake valleys. They constitute especially productive and important natural systems.

Rochester, with its thriving photographic, instrument, and apparel industries, is a flourishing urban area. Like other urban centers, it faces problems associated with rapid expansion. Its economy has been strong enough to absorb much of the in-migration flow in recent years. The great growth in local industry on a highly technical level has stimulated a corresponding rise in median family income. Over 500,000 additional residents, or a population increase of 50 percent to 1.6 million, is projected for 1990. It is expected that 41 percent of this number will be non-white, compared to 17.6 percent in 1970. At this time, about 10 percent of the region's population is over 65 years of age.

The central problem facing the region, in the light of this expanding population, is how best to provide for the physical, social and economic needs: housing, solid waste disposal, transportation, use of the natural resources, -- and all on a basis that ignores political

boundaries. Environmental education also must reckon with the cultural mix and problems of population distribution on a regional basis.

FORUM FORMAT

Dr. John A. Gustafson, Commission Vice-Chairman, keynoted the Forum on January 25, 1973 which convened at 2:15 p.m. and continued through dinner until 9:00 p.m. Approximately 180 community leaders and educators listened to his challenge to "Become the First 'ecophiliac' (earth-lover) on your block." He added, "We must be eco-sensitive, not simply environmentally aware. We must be committed to action, not merely informed and concerned."

The Forum focused on the Commission's broad goal: an environmentally enlightened citizenry achieved through the development of a comprehensive environmental education program, which will result in the maintenance and improvement of environmental quality.

With representation from highly diverse groups, idea exchange was energetic and exciting. Small discussion groups approached educational activities and needs from four points of interest: citizen action groups, business, industry and labor, conservation and government, and education at all levels (elementary, secondary, college, continuing education, youth groups). Provision was made for feed-back reports from each of the groups and, as the conference progressed, opportunity was provided for open discussion on the questions of future needs, regional coordination, and required resources.

Professional educators recognized that even the best educators in the region are frustrated when they measure their accomplishments against their desired standards for comprehensive, lifelong, eco-sensitive environmental education. The progress reported by these committed educators was overshadowed by their constant awareness of the obstacles to be overcome if environmental education is to move forward: funds, facilities, administrative commitment, time and training. Although progress is being made, there are

all too few "shining examples" of stimulating programs. There was a new realization of the value of youth programs, especially since they often have become the motivating force for bringing multi-disciplinary ecological insights to the classroom. Special tribute was paid to the Scouts, 4-H and other efforts of Cooperative Extension, and Rochester Museum programs. However, these educators noted that the independent nature of school districts creates a fragmented awareness of what is happening and what is available in the region.

Educators also expressed a great need for some type of regional cooperative effort which will provide tools and know-how for changing behavior patterns, value systems, and lead to commitments to new life styles. "Complete multi-discipline, lifelong environmental education cannot and will not happen without strong regional leadership and comprehensive planning" was the way one spokesman expressed the situation.

College representatives present reported that their institutions already have a wide range of courses available and a number of new proposals are in process. They accepted readily the plan for a consortium whereby the institutions could cooperatively work together. It was proposed that the Community Resource Development program staff of Cooperative Extension might serve as its convenor-catalyst.

The Citizen Interest discussion group noted that since Earth Day, April 22, 1970, citizens groups have given visibility and viability to many environmental projects. For example, 42 recycling programs (public, private, and volunteer) emanated from the first area-wide glass drive ("Give Glass Some Class") led by the fledgling Monroe County Consumer Council in September, 1970. They also claimed much credit for the impetus, inspiration, and in-service training for most in-school environmental education programs. As evidence, they pointed to school surveys conducted by citizens, not school administrators. In addition, they enumerated how they have supplied speakers and resource material for school programs, teacher workshops, school-related recycling and compost projects.

An analysis of the various types of citizens groups which have sprung up within the region revealed that prior to Earth Day 1970, there were 25 such groups. Since that time an additional 27 have come into being! This fragmentation of effort caused the group to recognize and critize overlapping of purposes and projects, and their isolated, localized modes of operation. There was agreement that these problems could be corrected by increased communication and greater cooperation and coordination among their leaders.

Forum participants attending the business and labor section had mixed feelings on the question, "What ought to be the role of business in environmental education?" Although some would settle for "Just stop polluting"; others wanted financial backing for environmentally-aware political candidates; active lobbying for environmental research and legislation; scholarships and incentive awards to recognize youth achievements in environmental projects.

Some Forum members conceded that the low credibility industry has among many environmentalists in the region is somewhat unjustified. There was considerable discussion of anti-pollution advertising by certain companies; of "advertising pollution" by others. Additional Forum members pointed to factual advertising and how it has served as an educational vehicle for the public and other businesses. Those businesses which have attempted to communicate with both customers and their employees were commended. A proposal was made that industrial house organs could provide greater coverage of community environmental projects, especially recognizing and encouraging employee participation in these activities. Research data, technical know-how, financial backing, audio-visual materials and expertise supplied by business and industry have contributed to the success of local environmental projects. However, greater inputs were deemed desirable: more research (both pure and applied): internal recycling programs: free litterbag promotions: and plant tours with an environmental and anti-pollution focus.

Eco-politicians participating in the Forum decided that action should be aimed at influencing local government. Senator Bernard C. Smith, Commission Chairman, reminded the group that school boards are a branch of local government and that citizens must learn to enlighten and influence board members if priority is to be given to environmental education. One local government, as reported, has passed an entire environmental package of eco-ordinances. Flood plains, steep slopes, wetlands, conservation areas, billboards, solid wastes, transportation planning, salt on roads, are among local problems addressed by these new regulations. Developers now must include environmental impact statements with their plans before the local planning board will place them on the agenda. The Town of Penfield Conservation Board, first in the state, must review and give recommendations regarding development of open space, among its many other responsibilities. Such a plan has implications for high school students providing them opportunity to study first hand these important new local government operations. Another benefit could be increased parent (voter) awareness of local issues.

The conservationists in the region, as professionals and citizens, reminded participants that they were the first to warn the public of the destruction of our natural resources. This group described both youth and adult programs sponsored within Region 8 of the Department of Environmental Conservation, stressing particularly: promotion of conservation field days as part of school programs; encouragement of groups to develop outdoor education centers; and employment of a specialist to work with and help establish county, town and local conservation councils. Although the audience commended this progress, they challenged the Department to devote greater time and attention to educational needs of urban populations, both youth and adults.

RECOMMENDATIONS

In all the discussion of needs and goals for a proposed regional plan for environmental education, one concept prevaded all else: "the goal of encouraging a stewardship responsibility toward natural resources."

Inherent in this goal is a need for the development of values and attitudes which would effect a necessary change in life styles. To perform this task, participants proposed the following:

1. MASS PUBLIC EDUCATION - education be recognized as the major avenue to societal change and that ways be developed through more formal programs in the public schools, the church, private and public agencies, to reach all the population.

2. A QUALITY MULTI-DISCIPLINARY CURRICULUM be developed within the perimeters of formal education; such program to include emphasis on behavior change and value formation, not just environmental content. Further, that the emphasis be on both urban and rural ecology and the problems of contemporary society. Although some sought a mandated course of study, others preferred the "grass roots" approach through real commitment and voluntary action.

3. BETTER TEACHER PREPARATION OCCUR, including substantive courses in teacher preparation for all future teachers; in-service education programs; practical workshop experiences; incentives and/or fellowships to encourage teachers to pursue such study; released time for teachers to study and lead extensive class projects; professional recognition for service through the publishing of field study experiences.

4. EMPLOYMENT OF ENVIRONMENTAL SPECIALISTS to assist with in-service programs for those working with continuing education programs and youth groups; possibly, for these specialists to be supported by business and industry.

5. WELL-DEVELOPED COMMUNICATIONS SYSTEMS on three levels: inter-communication among groups and institutions by means such as an expansion of the regional newsletter, ENVIRO NEWS;

improved intra-communication within schools, citizen groups, business, industry, colleges, etc.; a community-wide approach using every type of mass media available to build public awareness and stimulate a commitment for action.

6. THE DEVELOPMENT OF MORE OUTDOOR LEARNING CENTERS for both children and adults, located convenient to where the population liyes, possibly through cooperative funding.

7. STEPPED UP ACTIVITY IN BOTH PURE AND APPLIED RESEARCH, translated into laymen's language and available for distribution so that authorative information will be available to aid in the decision-making process.

8. A REVIEW OF THE FISCAL CRISIS FACING THE SCHOOLS and an inventory and cost analysis of the necessary materials, personnel and other items involved in the implementation of a full-scale environmental education program.

9. THE ESTABLISHMENT OF A COMPREHENSIVE REGIONAL PLANNING CENTER responsible for providing strong leadership to local community, town and county groups and for the coordination and dissemination of information on activities within the region.

10. A CLEARING HOUSE which would provide the greatest possible support to those seeking information for initiating and implementing all types of activities.

A final appraisal of the Forum indicates that there is a real need for a more highly coordinated effort to bring into concert all those groups currently involved in the advancement and conduct of environmental education. This well may come through the development of regional centers.

NEW YORK CITY FORUM
ON
FUNDING FOR ENVIRONMENTAL EDUCATION

February 23, 1973

INTRODUCTION

The central purpose of the New York City Forum was to estimate the magnitude of resource and funding support available for environmental education. The Commission was also interested in learning more about the characteristics of programs receiving support and the methods of dissemination and evaluation used by agencies providing support.

A supplementary purpose was to generate dialogue among those organizations which require continued support. It was felt that groups and institutions which had identified environmental education as a primary goal of their programs would profit from an interchange of ideas on the topics being investigated by the Commission.

The public forum also produced a dialogue between those who determine goals for environmental ventures by delegating funds and those who must design and implement programs to reach these goals. The Commission felt that the interaction between these two groups would create a better understanding of the expectations of each group.

Prior to the forum officials of private foundations, educational institutions and state and federal government were interviewed. During each interview, four topics were covered: 1. present and future nature of funding support for environmental education; 2. evaluation techniques used; 3. definition of environmental education; 4. recommendations on the state's proper role in environmental education.

Through mailings, press releases and follow-up telephone conversations, most environmental and educational groups in the region were invited to attend the public

forum. Representatives from private business, industry and labor were also invited as were members of the press. Several microphones were placed in the auditorium to facilitate audience comment, and tape recordings were made to assure accurate documentation. To accommodate those who did not speak during the session, a written questionnaire was given to each participant at the onset of the forum. The questionnaire covered topics similar to those discussed in the private interviews. These findings are summarized in the supplement to this report.

Senator Smith chaired the meeting assisted by the Commission's New York City Coordinator, Kristin P. Bergfeld. A panel of professionals in environmental education was also assembled to present an assessment of environmental education and to respond to audience questions. The forum was not a public hearing in the conventional sense since no specific proposal was being offered for review. However, drafts of legislation proposed by the Commission were distributed, and participants were urged to respond candidly to them. The forum was divided into two segments -- a general discussion of the needs for total community involvement and more specific discussion of the topics covered during the interviews.

The mood of the session was congenial, cooperative and supportive of the intermeshing of efforts to provide program support on the state and local levels. The participants were eager to learn about each other, about alternative funding possibilities, and about potential new roles for New York State. Most expressed a strong desire to sustain associations made at the forum.

FINDINGS

A. Private Interviews

Generally funding organizations headquartered in New York City service the urban environment. Interests range from nature education courses in urban settings to innovative designs for the use and re-use

of urban spaces for all modes of human activity. Concrete goal formulating and program structuring are on the increase within funding groups. They are presently defining their own priorities and specifying critical need areas that may not be met by trade organizations, industry or other sources.

Ingenuity of program design is the most important criteria in choosing among funding applicants. On-site visits, direct communication, correspondence and interviews are also used to help decide which programs to fund. There is a definite trend toward curtailing the flow of unsolicited proposals that have flooded foundation directors' desks in the past. Instead, funding agencies are actively seeking programs which correspond to the donors' specific interests.

Providing existing educational institutions with novel ideas and relying on their educators and researchers to refine them seems to be a common method of program development. The trend is definitely toward funding programs that address themselves to political reality and issues important to the general public. Donors avoid programs confined to a problem area (such as community recycling) on the grounds that these kinds of programs should be funded by industries related to the particular problem being attacked.

Established environmental educational efforts appear to be receiving less funding than applicants for "incentive grants" or seed money to start a program within an existing yet flexible structure.

Replicability is important to government agencies, but less significant to private groups. Both government agencies and private foundations feel that replication is more feasible if the donors can maintain close contact with the programs they fund. For this reason they try to review programs continually. All groups interviewed also stressed the benefit of continued communications with people interested in adapting or emulating funded projects.

Printed descriptions of projects and their impact seems to be the most expedient and reliable way of

informing interested parties about the rationale, operation and impact of funded programs. Governmental agencies require written reports on each project they fund, anticipating the widespread replicability that the projects may have. Generally, funding representatives feel it is imperative that programs be funded over an extensive period of time in order to insure the validity of the final report. Most have experienced the inadequacy of feedback from groups funded for too short a duration and the resulting inability to make valid evaluations.

Evaluation methods vary, but each procedure attempts to maintain direct contact between grantees and grantor, with the grantor consulting and nurturing the program if necessary. External forms of evaluation and testing were not employed by any donor interviewed. However, such methods are seen as highly valuable and essential for defining the current state of environmental education, its future, and the roles to be played by the burgeoning number of professionals entering the field.

While each officer interviewed had formulated, or was in the process of adapting, a tailored definition of environmental education, all agreed on the need for clarification of the phrase from professional educators. Engineers, scientists, architects, naturalists and businessmen have definitions of environmental education to complement their particular disciplines and responsibilities; however, there is still no single definition which all accept. Most of those interviewed felt that until there is a common definition, environmental education will continue to be the potential "catch-all" for any program in need of refreshment and for new sources of funding.

B. Public Forum

All of the participants and panelists welcomed the forum as an opportunity for idea exchange and wished to participate in any public hearings that might precede the introduction of environmental education legislation. Those attending represented all major sectors of the

metropolitan area: local and national groups with special interest in environmental education; public and private educational institutions for all age levels; media groups concerned with programming to reach the general public; graduate level education in specialized fields; citizen action groups; community planning boards; information centers. City service agencies were also represented as was organized labor. Because of the time of day, many of those professionals concerned with the daily task of teaching environmental skills were not able to attend the forum. However, their needs and interests were well-expressed by those present.

The general public was perceived as poorly informed, only slightly aware of the depth and urgency of environmental problems, and unaware of the potential within the state for achieving resolutions. Many participants attributed the low level of awareness in the general public to a "need for coordination of the obvious resources already available from a host of talented sources." Effective, consistent coordination of all interests, information and audiences was also identified as the key to bringing about an awareness of the difficulties inherent in resolving conflicting needs and of the decision-making process used in weighing alternatives. At present, however, professionals serve different audiences and espouse different rationales. They find that their efforts are isolated, lacking in leadership and deficient in significant back-up support.

Remarks concerning the current status of environmental education had a clear undertone of frustration and stagnation. It is noteworthy that this was the mood of those program directors and information disseminators who daily grapple with educating their public, keeping abreast of the flood of information pertinent to their field, insuring financial survival and making a program work. The group felt that environmental education was regressing and needed nurturing and official support from higher levels of government and from educational agencies. At this juncture, environmental education requires consistent reinforcement legally, financially and institutionally.

During the course of the morning's discussion, Senator Smith underscored the need for support from business and industry. "Industry and labor are wary of becoming involved in an environmental education effort. This has been true in all regional meetings held by the Commission. But, why not use their advertising resources in constructive environmental educational efforts? We have got to pursue this support as part of the total community of resources," he said.

The state was seen as the major force for mandating educational leadership training in environmental education. Teacher training, in particular, was emphasized as having a higher potential impact than had yet been realized or demonstrated. Small grants were seen as highly valuable for promoting dissemination of materials and the wealth of existing resources. The need for a staff to maintain an umbrella clearinghouse and to sponsor additional forums was stressed.

Participants endorsed the concept of a state advisory and consulting council with planning services for all regions. It was seen as imperative to reduce the amount of time and money spent on the search for appropriate materials by any group. A representative of a major and respected environmental organization stated: "Groups and resources mushroom and die so quickly that an effective following of these, and an amassing of mailing lists, requires a full-time investigative and verification staff." New York City alone has such a broad spectrum of agencies and programs that findings here should be of direct benefit to the entire state.

As Senator Smith pointed out, existing materials are far too difficult to acquire. They are cloistered in special interest groups, or are simply difficult to disseminate in the massive quantities necessary. More updated, mechanized communication networks were specified by one expert in the forum as the key to providing optimum clearinghouse services.

Almost without exception, the participants asked that they be informed about further activities of the state and the Commission. The need for candid feedback between the state and the host of interests in this region cannot be overstated.

A SOUTHERN TIER REGIONAL FORUM ON ENVIRONMENTAL EDUCATION

February 1, 1973

THE REGION

The Southern Tier Regional Forum represented the counties of Chemung, Schuyler and Steuben, an area of about 2,165 square miles. The region, predominately rural with rolling hills, is drained by three major rivers and their tributaries: the Chemung, Tioga and Cohocton which join the Susquehanna River at the Pennsylvania border.

About 96 percent of the land area is classified as non-urban (wooded area, farmland, rural residential). Chemung County is the smallest in land area but largest in population, while Steuben County, second in population, has a land area equal to that of Chemung and Schuyler combined.

The 1970 Census of the region showed inhabitants to be settled primarily in the valley floors and river plains, and concentrated in six major urban areas: Elmira-Horseheads, Watkins Glen-Montour Falls, Corning, Hornell, Bath and Wayland. The balance of the population was dispersed throughout the counties with fewer than 250 persons per square mile. Of the 217,820 residents in the region, about 45 percent were under age 24; 43 percent ranged in age from 25-44, and about 11 percent were 65 years of age or older. About 86 percent of the labor force was engaged in non-agricultural wage and salary positions with 9 percent in all other non-agricultural employment. Approximately 35 percent was employed in industrial plants and about 5 percent in agriculture.

The Corning Glass Works, Ingersoll Rand, and several smaller industries constitute the region's major industrial enterprises. Only around 9 percent increase in population is estimated for the area by 1990. However, with the development of the Southern Tier and Genesee Expressways, people are tending to shift from the concentrated urban centers to nearby rural areas.

Commuting is already a well established pattern. Open space is giving way to housing developments and the possibility of even relocating industrial sites is forecast for the future.

Probably no other area in the state has the need for rebuilding and renewal to the extent this area has experienced since "Hurricane Agnes" wrought its destruction in June, 1972. At first, "flash flood" warnings alerted the inhabitants, followed by the breakdown of communication lines. Continuing sheets of blinding rain poured down upon the area. Evacuation efforts began as the rushing waters continued to overflow the river banks. By the third day, residents began to feel the real shock of the torrential storm. The downtown areas of Corning and Elmira were inundated; homes broke away from foundations, moved with the current and piled up downstream. A state of emergency was declared and all available agencies, citizens, even the National Guard, were called into service.

As the waters began to recede on the fourth day, the real devastation became visible. Mud and debris littered streets, homes, business establishments, farmlands. The Corning Glass Works suffered a tremendous set back, losing much of its valuable collection of glass. The stench in the area was sickening. The time had come to "clean up" but where to begin! Safety crews inspected bridges, water supply, homes, and checked foundations of all kinds. Homeowners attempted to rescue their few belongings and hospital services were again made available. Schools served as shelters for evacuees until suitable housing could be found. Governor Rockefeller and his staff assigned to review the destruction, as well as Vice-President Agnew, recognized that here was an area needing real emergency help. People throughout the state poured funds and equipment into the region to restore the communities to some kind of more normal living. Water, gas and power were put back into service as soon as possible and mobile homes were moved to the area to relieve the housing situation. The aftermath of "Agnes" brought the community together, each person helping the other. Although there had been a feeling "It couldn't happen here", the reality of the situation showed that it could, and did.

What caused this destruction? What needs to be done to prevent a reoccurrence? These are paramount environmental questions which this central region of Southern New York must face.

THE FORMAT

The Commission's all day meeting held at Elmira College, February 1, 1973, involved representatives from education, labor, local government, citizen, conservation, youth, business and industrial groups. The 201 participants addressed themselves to three major questions relating to their region and the need for environmental education: What's happening? What should be happening? What can we do to make it happen?

It was a noteworthy occasion on several counts. Youth were well represented, often in the company of their teachers; their own spokesman addressed the Forum. Organized labor had two spokesmen present who reflected their interest and desire to participate in forceful, convincing terms. Additionally, both the Forum and development of a regional plan benefited significantly from the participation of two representatives of industry throughout these three months of activity.

Dr. John A. Gustafson, Commission Vice-Chairman, using the topic, "An Environmentally Enlightened Citizenry?" presented the opening address. Being faced with a massive job of cleaning up and reconstructing their area as a result of storm "Agnes", his listeners readily recognized the need for reviewing their present situation and for providing for careful future planning both for the conservation of the area's natural resources and for their own well-being as citizens of the region. Dr. Gustafson's remarks challenged the group to build a new awareness through education of the populace and called for a concerted effort to coordinate activities and move toward a common goal which would enhance the lives of those who have chosen to live in the area.

Following his address, representatives from the above mentioned groups were called upon to review what is currently taking place in the area and clarify the reasons for the action. Two particular groups, labor and youth, spoke out enthusiastically and forcibly for immediate action and pledged their support for an

active regional program. The youth group pleaded for: more inter-action between local schools and the community; flexible schedules and on-site study of local problem situations, as a means of studying the area's natural resources. Likewise, the labor interests expressed a desire for greater cooperation between the schools and the industrial interests.

The afternoon program centered around four major discussion groups where each category of representation could explore in depth the needs of the area, what might be done, and the kinds of resources required to meet these needs. So that all could benefit from the group meetings, a general feedback session was scheduled and viewpoints exchanged.

Public school and college personnel identified some of the activities currently in operation in the public schools and colleges. Mini-courses from five to ten weeks in length, elective courses in outdoor education, field trips, more flexible program scheduling, more environmental centers, an expanded environmentally-oriented library, greater use of media software, expanded elementary science programs, and the introduction of special environmental courses in the Elmira high schools, represented types of activities reported.

The educators present, as well as other groups, identified many obstacles which prevent schools from embarking upon an extensive program of environmental education from grades K-12: teacher's lack of basic preparation in environmental subject matter, in-service education, and administrative support; the tight school schedules which limit extensive field trips; the lack of released time to organize and plan for the development of "know-how" and programs for implementing environmental education activities in all grades; the pressure of other academic subjects, and the lack of funds for experimenting in new curricula development and school organization.

Throughout the Forum, time and again, school boards were encouraged to work more closely with business and industry to develop a realistic, problem-solving situation for learning, rather than the traditional text

book approach. Boards of Cooperative Educational Services in the counties offer courses in water pollution, and soil conservation but even these programs need to be expanded and new programs developed with more opportunities to explore the broad field of environmental education.

Colleges in the Southern Tier Region appear to be in the forefront, working toward expansion of their existing studies in environmental education. They have offered not only technical assistance to government agencies, the community, the schools and other organizations but have also taken active steps to develop an increasing number of courses open to undergraduates, high school students, teachers and the general public.

Alfred University now includes a major in environmental studies in its undergraduate program. Elmira College and Alfred University engage in studies of stream and lake water quality as well as the effects of pesticides, the improvement of community planning and fisheries. Elmira College also offers a six-week ecology course for non-science majors; independent study programs on the analyses of Seneca Lake; an on-going analysis of plankton studies at Seneca Lake, and maintains an arboretum for community use. In preparation is a course on "Environmental Challenges from the Stone Age to Space Shuttle."

The College Center of the Finger Lakes, a consortium of Alfred University, Cazenovia, Elmira and Hartwick Colleges, with headquarters in Corning, offers a variety of courses in ecology for secondary school science teachers and undergraduates; in-service programs for teachers; two 65-foot research vessels available for field trips; a lakeside labratory at Allen Point field station on Seneca Lake. Their program also includes public lectures by prominent environmental specialists; resource personnel; a Task Force to develop an interdisciplinary approach to environmental studies; a cooperative program with Cornell University for studying needs of people and matching these needs to services of social agencies in the three-county area. Corning

Community College is expanding its program to include courses in ecology, urban geography, and studies on pollution. This institution is searching out ways of developing a continuing education program which will meet the region's needs.

Local government representatives and conservationists, as a group, saw themselves as responsible for informing the public via media coverage; as advisors and resource personnel to various types of agencies and private groups. Many present spoke of specific data they could make available because of studies made by their groups; pollution, solid waste, billboard control, high heat incineration, sewage disposal, water control and other such items. Conservationists pointed to the Conservation Field Day programs inaugurated in the schools; their cooperation with a number of state, local and governmental agencies, private organizations such as the Federation of Sportsmen's Clubs, Neighborhood Youth Corps and social service organizations. Cooperative Extension organizes and sponsors a range of related educational programs, spanning interests of producers, consumers, and the public at large. Their activities which are focused to public problems in environmental management fall within Extension's Community Resource Development program.

Citizens' groups noted that their activities had been wide spread. The Southern Tier Girl Scout Council reported it had received a U.S. Office of Education environmental grant to develop a project to stimulate public awareness of the need for environmental education. A new Tanglewood Nature Center is being developed in Elmira, opening 100 acres of woodlands for public school use. A forum was held on flood plain management and although defeated, a citizens' group in Corning proposed to the City Council a city truck pick up of newspapers once a month. Outing clubs, 4-H, scouts, Campfire Girls and church-related organizations have set up youth camps and urged groups to use these facilities. The League of Women Voters of Chemung County sponsored an in-depth study of solid waste disposal.

RECOMMENDATIONS

The recommendations set forth below represent the goals for the Southern Tier. They have no boundaries. This Forum revealed an overriding need for giving a sense of direction to environmental education. It also revealed that, as of now, the potential for joint action is enormous, provided that the necessary steps are taken to give support to these recommendations.

1. TO ESTABLISH AND FUND AN ENVIRONMENTAL EDUCATION REGIONAL COUNCIL - one which would receive state funding to undertake regional coordination of activities bearing upon environmental education in all sectors.

2. TO CREATE AN ECOLOGICALLY SENSITIVE COMMUNITY THROUGH EDUCATION - the development of a new awareness for a change in life style; a redesign of school scheduling, curricula, and organization; a removal of outmoded patterns of rigid defensiveness among professional educators, industrialists, and government leaders, and a new spirit of cooperation which will give a new sense of direction toward common goals.

3. TO MAKE ENVIRONMENTAL EDUCATION TRAINING AVAILABLE TO TEACHERS, OTHER PROFESSIONALS - the development of in-service programs for graduate credit and professional advancement for teachers and industrial personnel; free tuition for teachers who supervise undergraduate interns; courses which show the relationship of environmental sciences to other disciplines, particularly how economics, psychology, sociology, ethics and the humanities are relevant to environmental education.

4. TO ACHIEVE A GREATER DEGREE OF COOPERATION AMONG PUBLIC SCHOOLS, BOCES, CONTINUING EDUCATION, COLLEGES AND UNIVERSITIES, with higher education providing a base for developing teaching techniques, cooperative research, in-service education and communication.

5. TO DEVELOP AN ENVIRONMENTALLY ENLIGHTENED CITIZENRY - a citizenry capable of developing realistic, attainable goals for environmental quality based upon sound knowledge of the economic as well as ecological impact, and in terms of future as well as immediate effect on the region. To implement this goal, a recommendation came from business, industry and labor, that a Committee on Environmental Education Resources be set up composed of these three groups, to function as a clearinghouse for information and source of expertise.

6. TO CREATE AN UMBRELLA-TYPE CLEARINGHOUSE - one which would inventory current resources and collect resource information for public use. Such an agency would bring together information from all sectors of the community.

7. TO LOOK TO VOLUNTARY INTEREST-CENTERED ACTIVITY AS AN ALTERNATIVE TO HIERARCHIAL MANDATES AND THE PROLIFERATION OF GOVERNMENT STRUCTURE.

8. TO ENCOURAGE AGENCIES WITH CONSERVATION PLANNING RESPONSIBILITY TO INFORM THE PUBLIC ON ENVIRONMENTAL IMPACT STATEMENTS, sharing knowledge of alternatives and "trade-offs."

9. TO ENCOURAGE TOTAL COMMUNITY INVOLVEMENT AND PARTICIPATION in environmental problems handled by local government by opening communication channels for exchange of information among all segments of society; especially to clarify how local government operates. The credibility gap between local government and the public must be closed.

10. TO SUSTAIN HIGH INTEREST IN ENVIRONMENTAL EDUCATION BY SUPPLYING DATA and information from local government projects to local schools, emphasizing the three C's - Cause ... Correction ... Costs.

11. TO SEEK PROPER REVENUE SHARING EARMARKED FOR ENVIRONMENTAL MATTERS.

12. TO DEVELOP LEARNING MODELS - using the "Think Tank" approach, develop models which would show students, teachers and the public the problems of business, government and politicians. In other words, present "What is on the other side of the coin?"

13. TO ELIMINATE THE CREDIBILITY GAP BETWEEN BUSINESS AND THE PUBLIC - using the public media for advertising is not enough; there must be a cooperative, genuine interest with committed representatives employing a people-to-people approach.

14. TO INVOLVE ORGANIZED LABOR - Encourage business and industry to give due recognition and support to employees who use their time and energy to become involved in local community activities, particularly environmental education.

15. TO ENCOURAGE AGRICULTURAL GROUPS TO SPEAK OUT - provide public understanding of agriculture's perspective on fertilizers and pesticides; again the "other side of the coin."

16. TO SUPPORT STRONG GOVERNMENTAL LEADERSHIP - by urging local school boards, local governmental officials, those who are the decision makers, to become "eco-sensitive" and take the positive action which will build for a balanced, integrated effort to get the job done.

POSSIBLE REGIONAL ACTION

The following are set forth as "starting points" toward total community involvement in environmental education.

1. It is proposed that whatever the future of the State Commission, its members be accessible, in some manner, to the people of the Southern Tier as a source of advice and counsel.

2. A comprehensive case study of the June 23, 1972 flood should receive high priority. Findings from this study could be a once-in-a-lifetime education on environmental relationships for the people of the region.

3. The development of an environmental center should be formed in the near future which would serve as a regional clearinghouse for personnel, facilities, and resources; also as an information and service center for developing workshops, seminars and other educational programs.

4. Steps should be taken immediately to increase coverage of environmental affairs by the news media - not for "reporting" but for "educating" the public.

5. Schools, colleges, conservation and governmental agencies should cooperate in pooling findings, sharing information, and reporting to the public. Data specifically related to regional needs and resources should be gathered and shared by all agencies. Such material would be especially useful in supplementing school textbooks.

6. Conservation Field Days, now a 6th grade activity, should be expanded to other grade levels as an initial step toward developing more extensive field trip opportunities.

7. Industry should collaborate with schools to work out more effective in-plant tours directly relating to classroom activity. Students might help industry prepare interpretive materials for their employees on how the company meets its community responsibilities for environmental quality.

SUNY

The traditional role of any full-scale university is tripartite - instruction, research, and public service, all three of which are intimately related. The State University of New York has well-established programs of instruction and research in environmental education, many of which predate the public's general awareness of our environmental crisis. Both instruction and research have a public service component though in some cases it is quite indirect. An effective instructional program molds the attitudes and values of the community leaders of tomorrow. An effective research program provides the raw data necessary for the implementation of new programs that will improve our environment. A common characteristic of instruction and research is that neither their impact nor their scope is restricted to a particular community. The university's public service programs, however, are usually carried out by specific campuses of the university to service the needs of the community in which they are located.

A few examples of the university's present and proposed activities in instruction, research and public service in the area of environmental education are described in the first section of this report. Next Empire State College is discussed as an example of how these three functions are integrated in the educational program of one unit of the State University of New York. Finally, specific steps related to the University's catalytic role in a total community involvement program of environmental education are recommended.

Almost all of the seventy-two campuses of the State University of New York have instructional components dealing with environmental education. Both undergraduate and graduate degrees in environmental studies are offered by various campuses. The College of Environmental Science and Forestry at Syracuse commands national and international respect as well as the Colleges of Human Ecology and Agriculture and Life Sciences at Cornell. Other outstanding programs include the B.A. program offered through Rachel Carson College of the State University at Buffalo, the Marine

Environmental Studies Program at Stony Brook, and the multiple programs of the State University at Albany and the College at Purchase.

The wide research effort of the university is most clearly exemplified by the Sea Grant Program. Now in its second year and with funding of more than a million dollars, the Sea Grant Program, through both inter-institutional cooperation and close working relationships with industrial and community leaders, seeks to gain for the citizens of New York greater benefits from the resources of its two coastlines.

The State University of New York operates many research facilities, including field stations, laboratories and demonstration forests which have major environmental education concerns. There is, for example, the College of Environmental Sciences and Forestry's Cranberry Lake Biological Station and Pack Demonstration Forest; Albany's Atmospheric Sciences Research Center; Cortland's Raquette Lake Outdoor Education Center; Brockport's Fancher Campus and the Biological Field Stations of Oneonta and Oswego.

The University's direct public service efforts in environmental education are exemplified in many programs. Offerings through the continuing education division of many campuses often involve elements related to environmental education. Workshops, field trips, advisory service and guest lecturers are but a few of the ways in which the community is served directly by the University. The Youth Development 4-H Program, operating through Cooperative Extension of the Colleges of Agriculture and Life Sciences and Human Ecology, uses out-of-school learning situations to encourage environmentally sound attitudes and actions in young people. It has recently expanded its cooperative programs with schools. The Community Resource Development program, also operated through Cooperative Extension, is a direct public service effort.

Donald J. White, the Cooperative Extension Specialist who directs the Regional Community Resource Development program office in Voorheesville feels that a cooperative venture between university students

(more specifically, students of Empire State College) and the Community Resource Development program would be valuable to both students and the community. Selected students could be involved in environmentally related projects tailored to the student's needs and interests which could have long range application to existing and projected community issues and concerns. Since students at Empire State College - the University's youngest unit, a college without a campus - pursue individualized and independent programs of study, the student's base of operation and study is within his own community. With the cooperation of the Community Resource Development program the student might select an environmental project of community concern related to open space, mobile home parks, vacation home development, transportation interchange development, eutrophication of lakes, shoreline development, etc. In line with his needs and interests, the student could pursue any number of activities related to his project - the clear identification of the problem, documentation, alternative solutions, recommendations for community action, etc.

This is simply one example of how research, instruction and public service can be melded into one concerted activity designed to foster total community involvement. Furthermore, since Empire State grants academic credit for demonstrated quality learning obtained outside of formal college work, a good proportion of its students are older, mature people, well established in their communities who possess professional expertise in a wide array of fields. With the advent of a master's degree in Environmental Studies, Empire State will attract even more students who possess advanced knowledge and skills in environment-related areas. These students can act as catalysts in bringing about an environmentally enlightened citizenry within their communities. The University sanctions such activities with academic credit and provides professional guidance when and where necessary; the community gains increased awareness; and the student, besides working toward a degree, reaps the personal satisfaction of aiding his community - all without any increase for the taxpayer.

The State University of New York, then, is fulfilling its tripartite role of instruction, research and public service in the area of environmental education. Ernest L. Boyer, the Chancellor of the University, is not content with pointing to the University's continuing record of service in this area. The Chancellor is charting new commitments outlined in the University's Master Plan which calls for the establishment of a Center for Environmental and Ecological Studies. Such a center would be non-residential in nature and allow the University to expand its capability for coordinated programs on a statewide basis. Public service would be a primary function of such a center.

The administration of the University is not alone in its commitment to environmental education. At the February meeting of the University Senate, the Faculty Senate unanimously endorsed a resolution supporting the broad goal of the Temporary Commission on Youth Education in Environmental Conservation.

In an effort to more fully implement cooperative ventures between private institutions, state and local agencies and the community at large, the University has just recently designated four coordinating geographic areas within which resources and personnel should be shared. Since the areas have been organized for only a short time, cooperative efforts are just beginning to bear fruit. It is important that the various state and local agencies involved with environmental matters endeavor to work out mutually acceptable and beneficial programs with University Units within the coordinating areas. Such cooperative ventures are essential if the University if to fulfill its commitment to public service in the decade ahead and, thereby, serve as a catalyst for achieving the goal of the Temporary Commission - an environmentally enlightened citizenry in the State of New York.

STATE OF NEW YORK

S. 10327 A. 12203

SENATE–ASSEMBLY

April 20, 1972

IN SENATE—Introduced by COMMITTEE ON RULES—(at request of Messrs. B. C. Smith, Day, W. T. Smith, Barclay, Giuffreda, Flynn, Langley, Brydges, Anderson, Laverne, Zaretzki, Lentol, Bronston, Halperin, Bloom, Powers, Gold, Dunne, Present, Rolison, Goodman)—read twice and ordered printed, and when printed to be committed to the Committee on Finance

IN ASSEMBLY—Introduced by Mr. LANE—Multi-Sponsored by —Messrs. HARRIS, MARSHALL, COSTIGAN, GILMAN, DROMS, F. A. CARROLL, RYAN, MEYER, Miss KRUPSAK, HARDT, STEINFELDT, R. A. BROWN, D. W. COOK, FINLEY, RICCIO, HARWOOD, CINCOTTA, H. J. MILLER, GINSBERG, WARDER, MARGIOTTA, JONAS, FIELD, BURNS, PISANI, BATTISTA, LEVY, BIONDO, MITCHELL, KINGSTON—read once and referred to the Committee on Rules

AN ACT

creating a temporary state commission to make a study of the teaching of the principles of environmental conservation in New York state and to make recommendations relating thereto, and making an appropriation for the expenses of such commission

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. A temporary state commission is hereby created to be known as the temporary state commission on Youth Education in

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

C

Environmental Conservation. The commission shall make a study of the current program for teaching the principles of environmental conservation in New York state and to make recommendations for the extension and development of such programs.

§ 2. The commission hereby created shall consist of eleven citizens of the state, of whom three shall be appointed by the temporary president of the senate, three by the speaker of the assembly and three to be appointed by the governor, and the commissioner of education and the commissioner of environmental conservation. Such members of the commission shall serve at the pleasure of the officer making the appointment. The commission shall have the power to elect from its members, a chairman, vice-chairman and a secretary. Vacancies in the membership of the commission and among its officers shall be filled in the manner provided for original appointments.

§ 3. The commission may employ and at pleasure remove such personnel as it may deem necessary for the performance of its function and fix their compensation within the amounts made available by appropriation therefor.

§ 4. The commission may meet within and without the state, hold public or private hearings, and shall have all the powers of a legislative committee pursuant to the legislative law.

§ 5. The members of the commission shall receive no compensation for their services but shall be allowed their actual and necessary expenses incurred in the performance of their duties hereunder.

§ 6. The commission may request and shall receive from any department, division, board, bureau, commission or agency of the

state or any political subdivision thereof such facilities, assistance and data as it deems necessary or desirable to carry out properly its powers and duties hereunder.

§ 7. The commission shall make reports to the governor and the legislature on the progress of its work not later than March thirty-first, nineteen hundred seventy-three. It shall include in its reports such recommendations for revision, modernization and simplification of the education law and conservation law as it may deem necessary or desirable.

§ 8. The sum of seventy-five thousand dollars ($75,000), or so much thereof as may be necessary, is hereby appropriated from any moneys in the state treasury in the general fund to the credit of the state purposes fund, not otherwise appropriated, and made immediately available to the temporary state commission for its expenses, including personal service, in carrying out the provisions of this act. Such moneys shall be payable out of the state treasury on the audit and warrant of the comptroller on vouchers certified or approved by the chairman or vice-chairman of the commission or by an officer or employee of the commission designated by the chairman.

§ 9. The provisions of this act shall continue in full force and effect until March thirty-first, nineteen hundred seventy-three.

§ 10. This act shall take effect immediately.